Klein Bottle Horizontal Glued Comparison of Level 3 Eigenfunctions and Level 2 Eigenfunctions By Averaging (First 150)

SPUR 2016

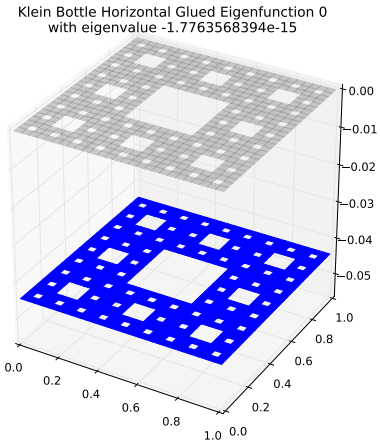
May 23, 2018

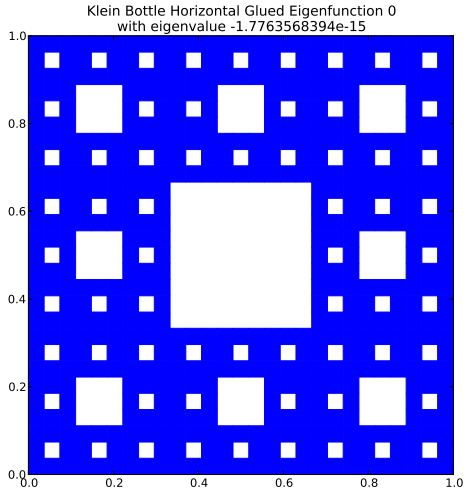
Key to Dot Value

Dot values are in general between 0 and 1; those close to 0 are better matches, while those close to 1 are not good matches. Dot value 2 indicates the eigenvalue averages to the zero function. Dot value 3 indicates the projection onto the closest eigenspace is zero.

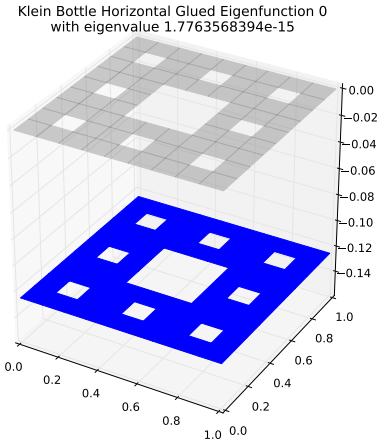
1 $M = 3$ Eigenfunction 0

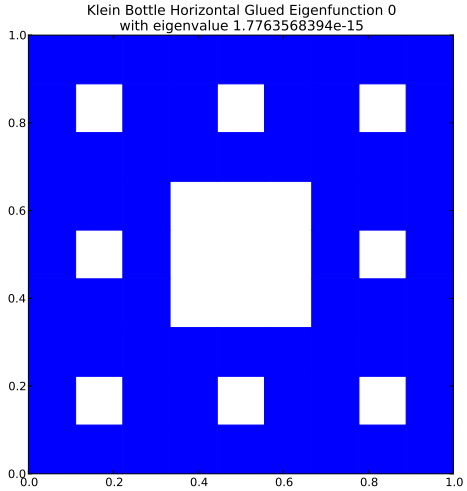
$M = 3$ Eigenfunction 0 has eigenvalue 2.67841304691e-15





Compare to $m = 2$ eigenspace with eigenvalue 1.7763568394e-15

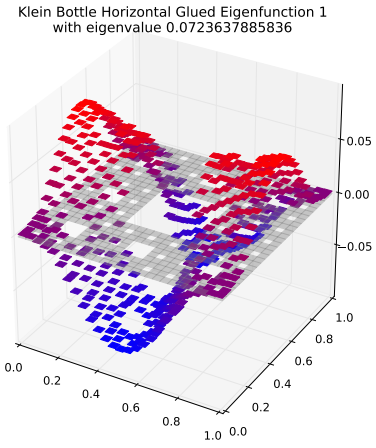


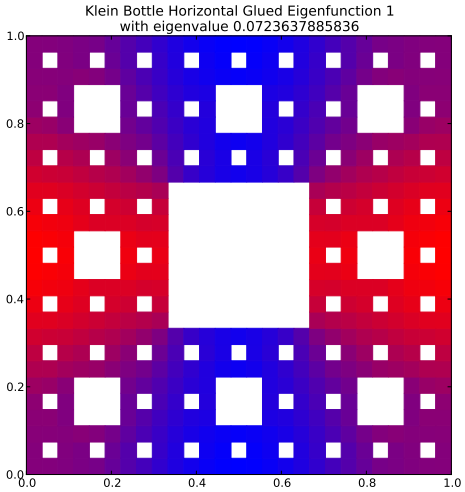


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 1.5078125$
Dot Value: 0.0

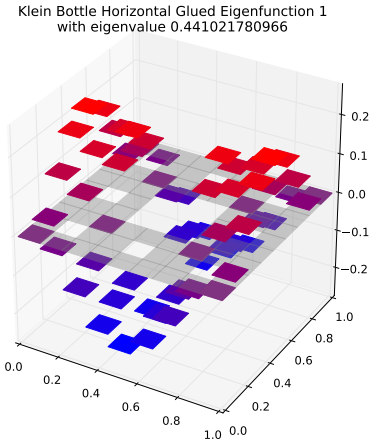
2 $M = 3$ Eigenfunction 1

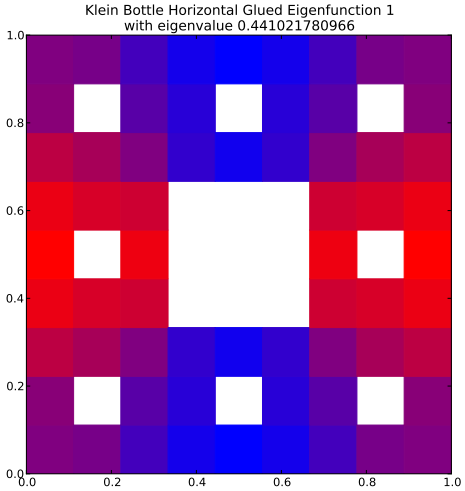
$M = 3$ Eigenfunction 1 has eigenvalue 0.0723637885836





Compare to $m = 2$ eigenspace with eigenvalue 0.441021780966

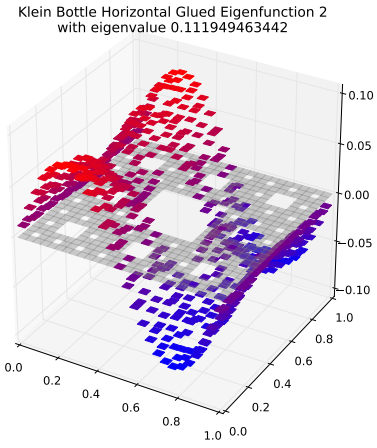


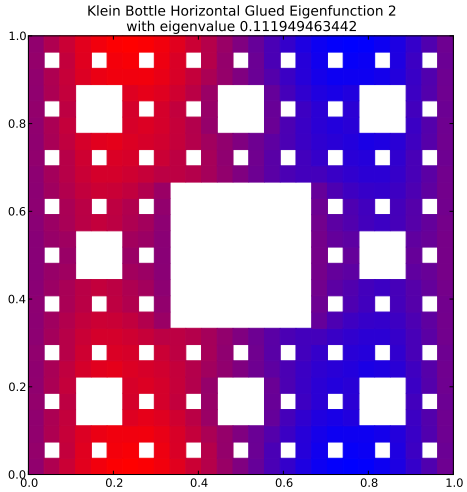


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.164082119539$
Dot Value: 0.0004106827796719337

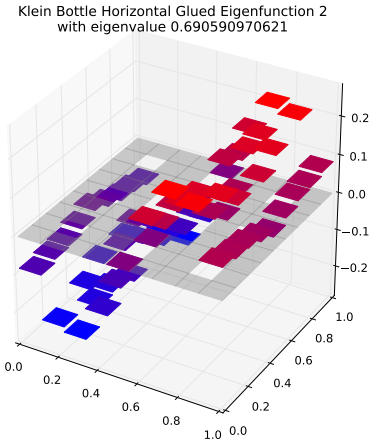
3 $M = 3$ Eigenfunction 2

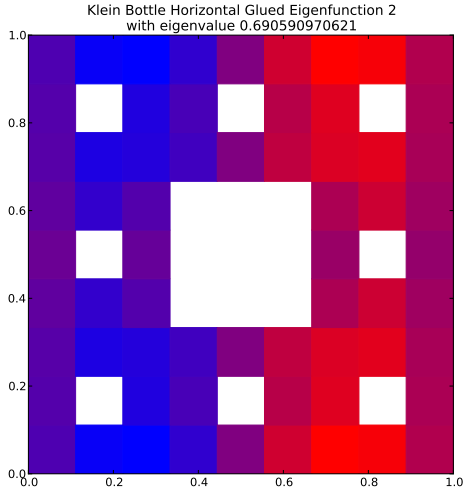
$M = 3$ Eigenfunction 2 has eigenvalue 0.111949463442





Compare to $m = 2$ eigenspace with eigenvalue 0.690590970621

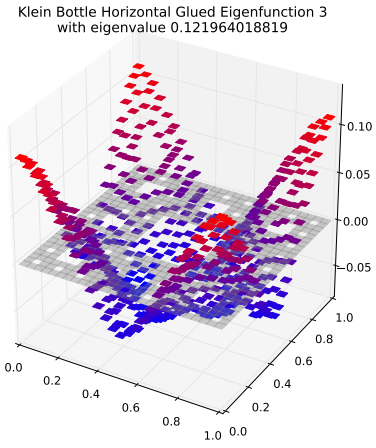


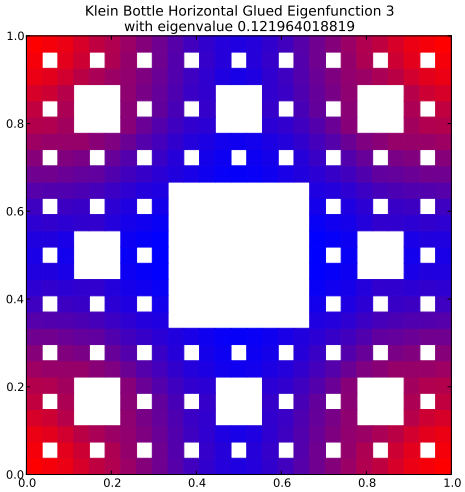


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.162106758131$
Dot Value: 0.0008467422239333278

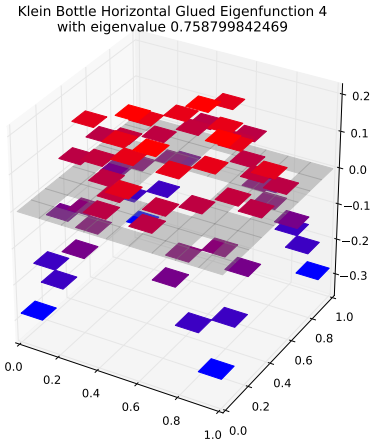
4 $M = 3$ Eigenfunction 3

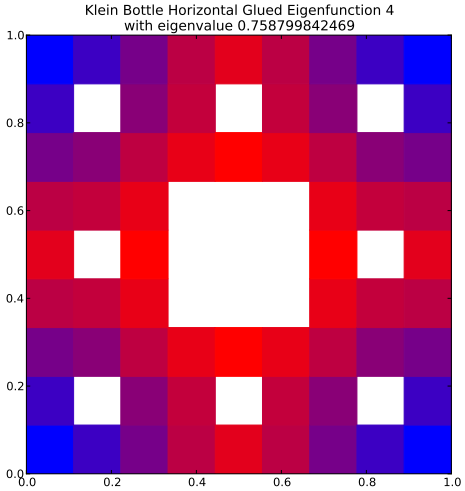
$M = 3$ Eigenfunction 3 has eigenvalue 0.121964018819





Compare to $m = 2$ eigenspace with eigenvalue 0.758799842469

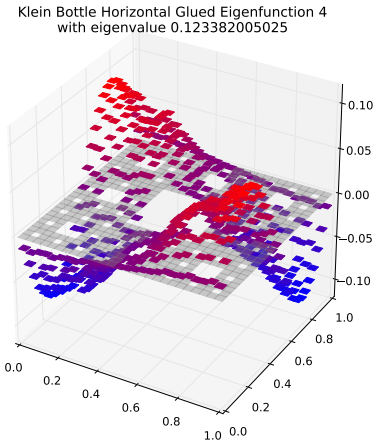


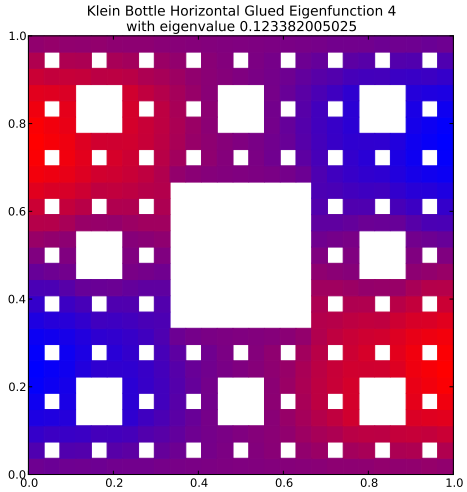


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.160732794069$
Dot Value: 0.0012136904306043 75

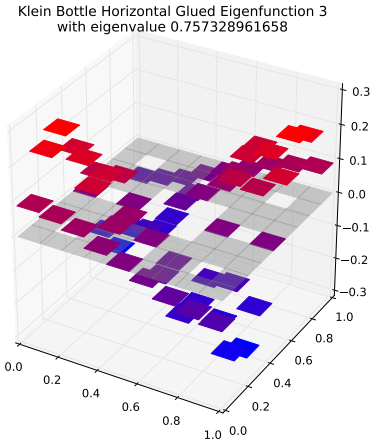
5 $M = 3$ Eigenfunction 4

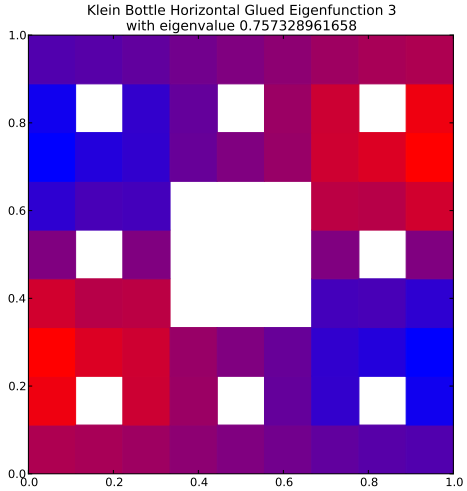
$M = 3$ Eigenfunction 4 has eigenvalue 0.123382005025





Compare to $m = 2$ eigenspace with eigenvalue 0.757328961658

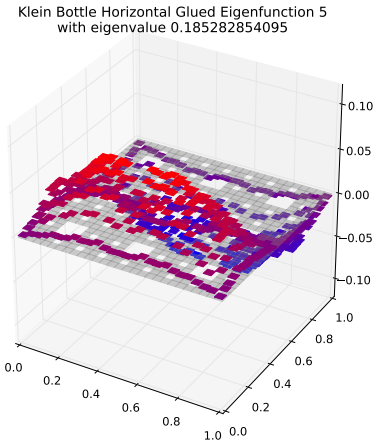


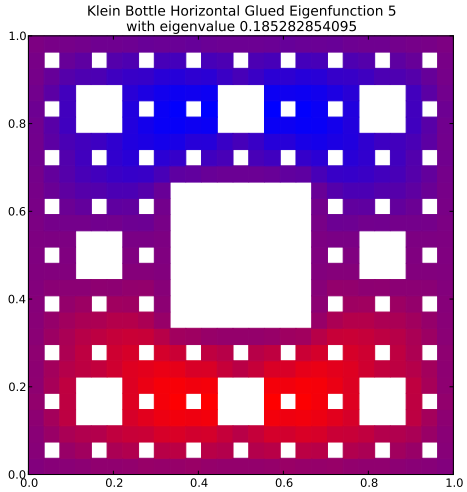


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.162917320308$
Dot Value: 0.001695495860162266

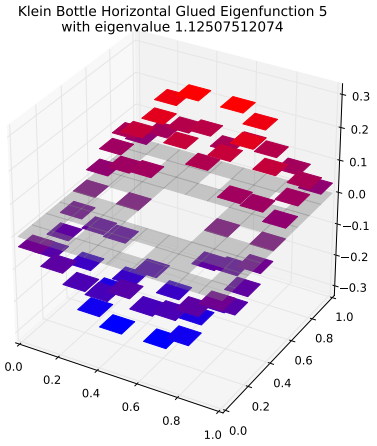
6 $M = 3$ Eigenfunction 5

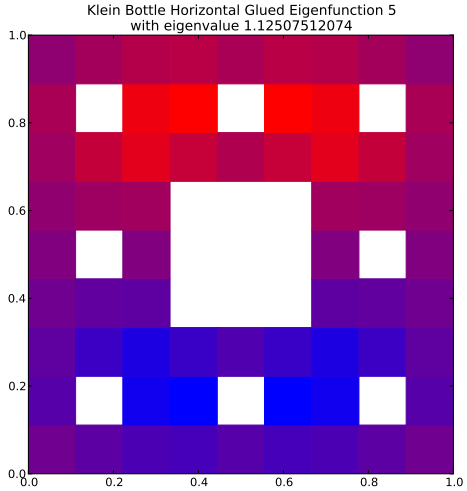
$M = 3$ Eigenfunction 5 has eigenvalue 0.185282854095





Compare to $m = 2$ eigenspace with eigenvalue 1.12507512074

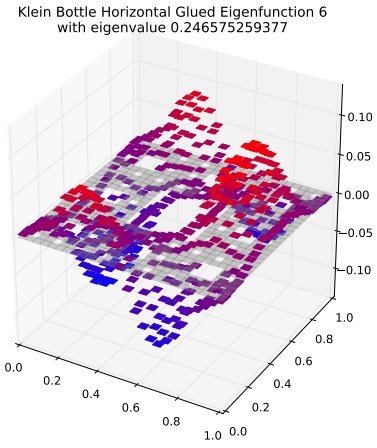


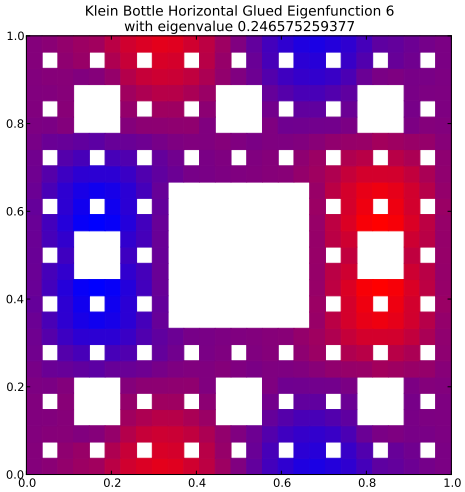


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.16468487364$
Dot Value: 0.0013315311553242504

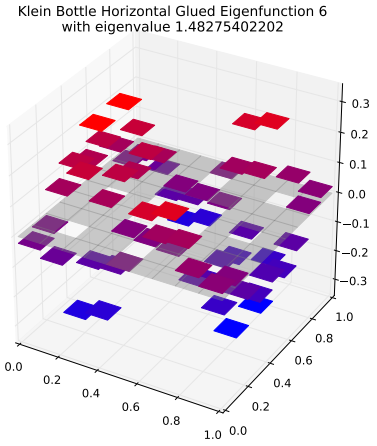
7 $M = 3$ Eigenfunction 6

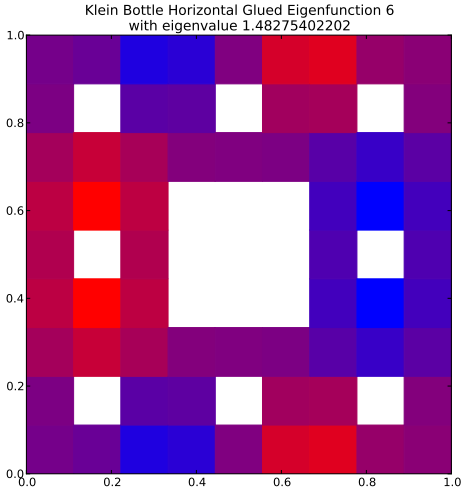
$M = 3$ Eigenfunction 6 has eigenvalue 0.246575259377





Compare to $m = 2$ eigenspace with eigenvalue 1.48275402202

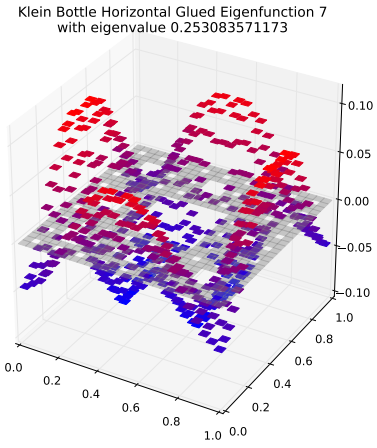


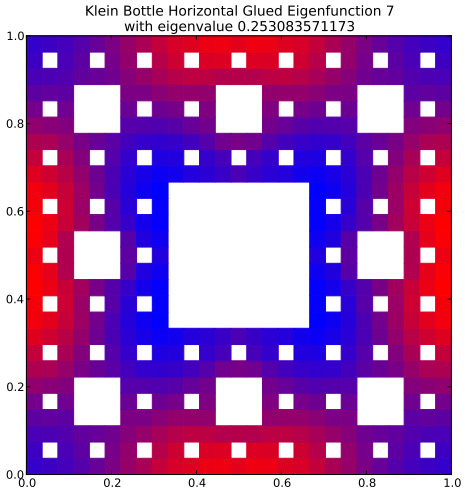


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.166295458124$
Dot Value: 0.0037616232125702 31

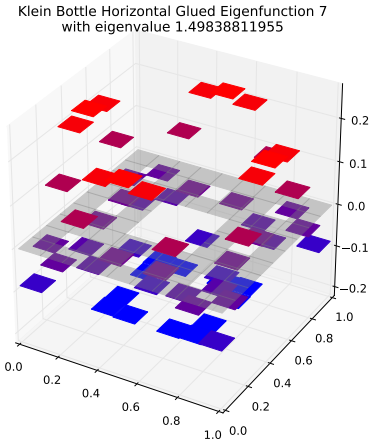
8 $M = 3$ Eigenfunction 7

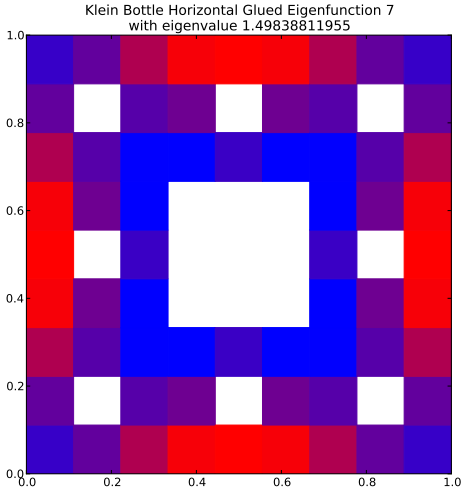
$M = 3$ Eigenfunction 7 has eigenvalue 0.253083571173





Compare to $m = 2$ eigenspace with eigenvalue 1.49838811955

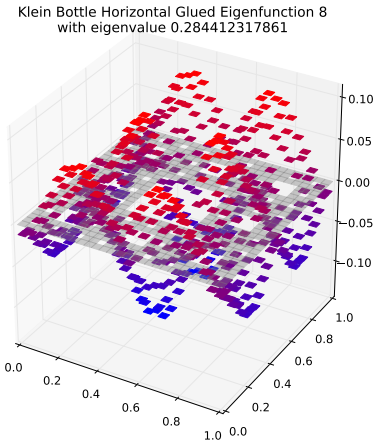


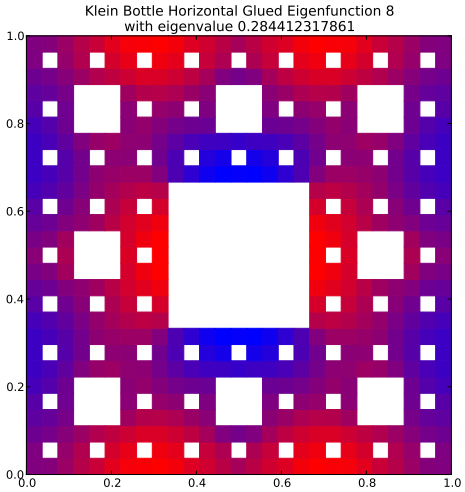


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.168903882693$
Dot Value: 0.014718189368639667

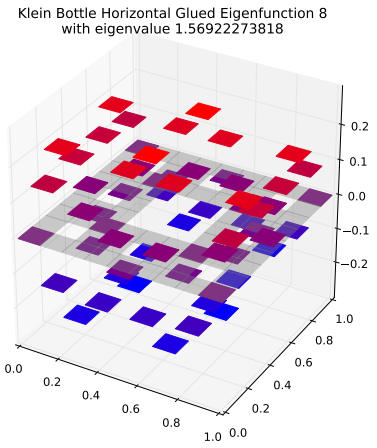
9 $M = 3$ Eigenfunction 8

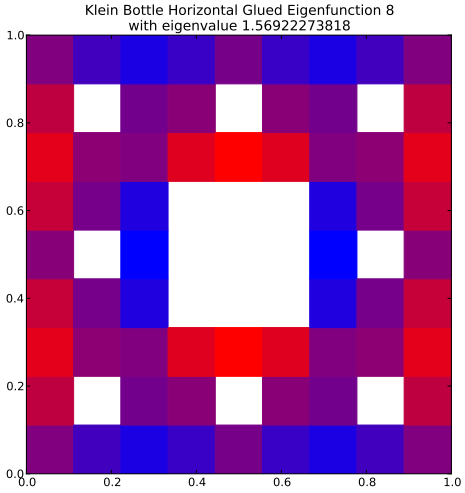
$M = 3$ Eigenfunction 8 has eigenvalue 0.284412317861





Compare to $m = 2$ eigenspace with eigenvalue 1.56922273818

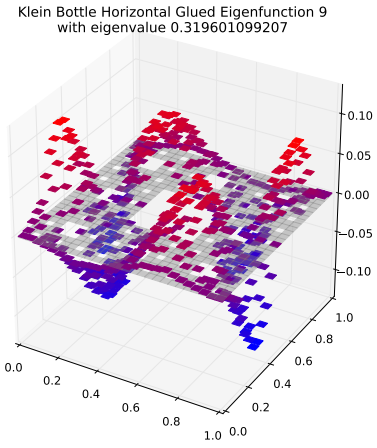


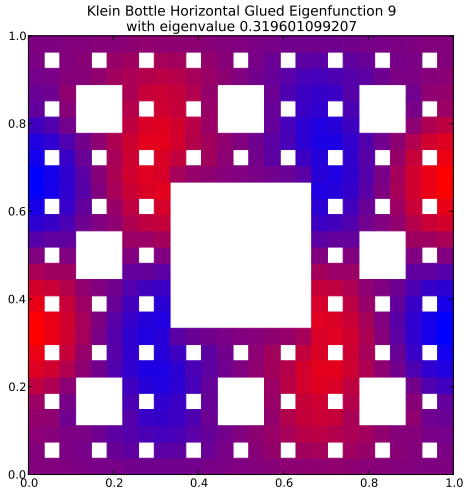


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.181244071311$
Dot Value: 0.011905936095741754

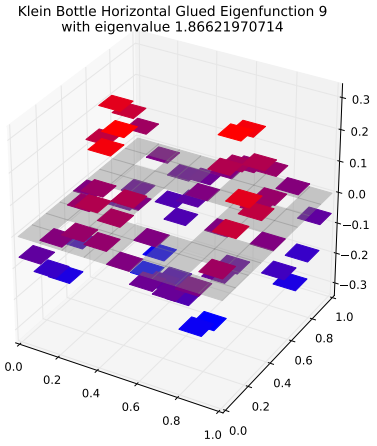
10 $M = 3$ Eigenfunction 9

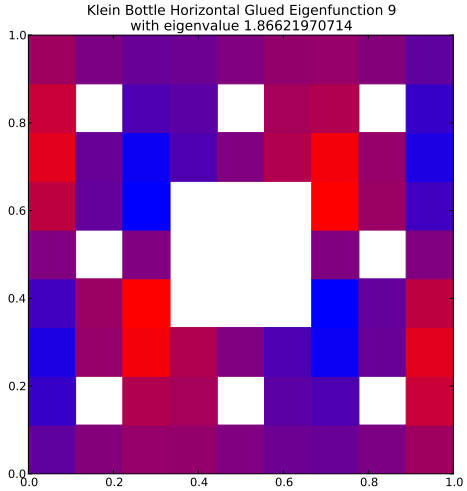
$M = 3$ Eigenfunction 9 has eigenvalue 0.319601099207





Compare to $m = 2$ eigenspace with eigenvalue 1.86621970714

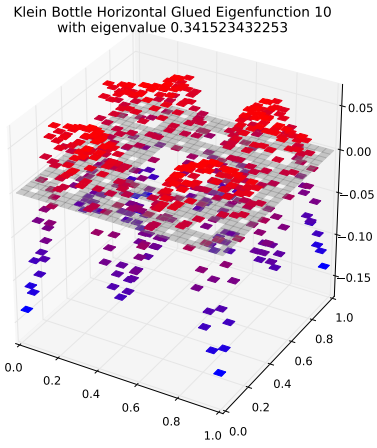


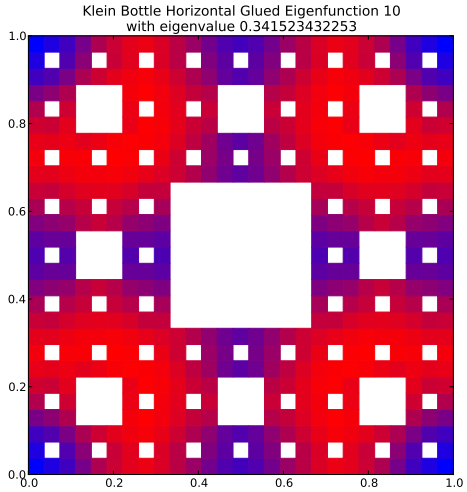


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.171255880529$
Dot Value: 0.08498327717138932

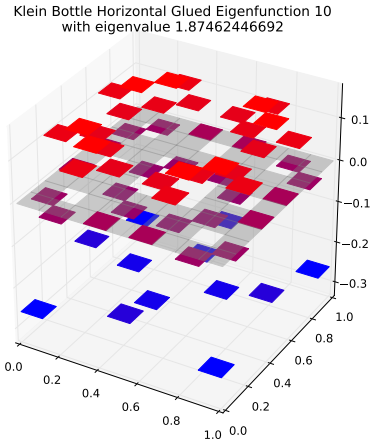
11 $M = 3$ Eigenfunction 10

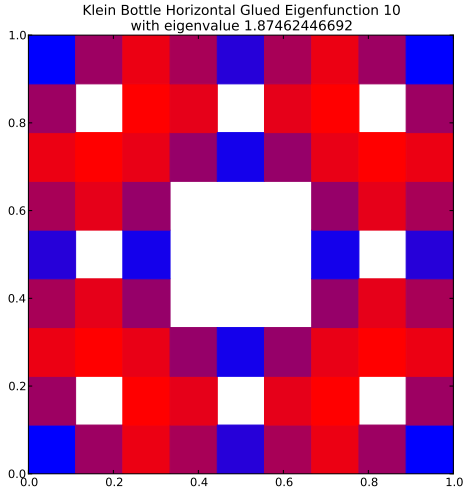
$M = 3$ Eigenfunction 10 has eigenvalue 0.341523432253





Compare to $m = 2$ eigenspace with eigenvalue 1.87462446692

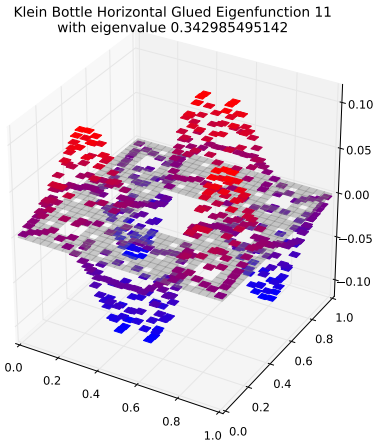


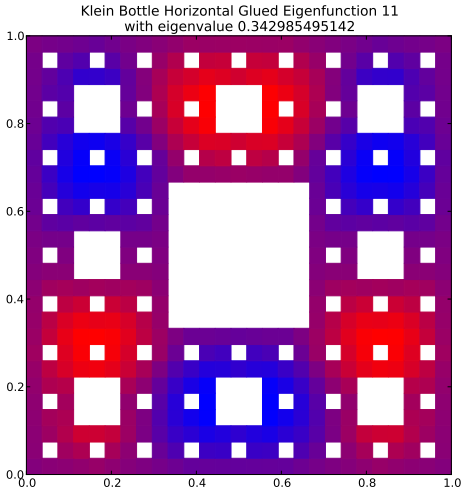


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.182182318795$
Dot Value: 0.024030335828698846

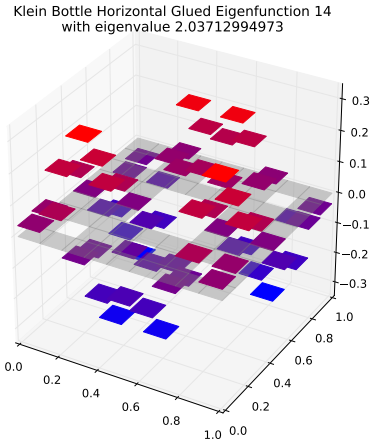
12 $M = 3$ Eigenfunction 11

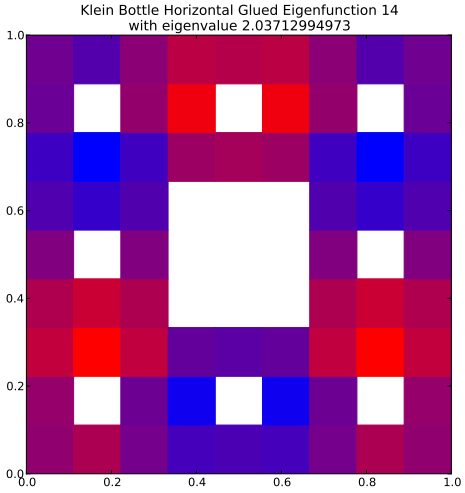
$M = 3$ Eigenfunction 11 has eigenvalue 0.342985495142





Compare to $m = 2$ eigenspace with eigenvalue 2.03712994973

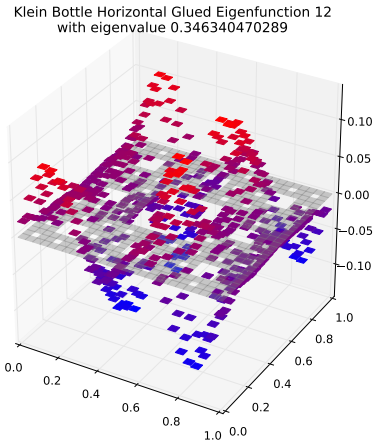


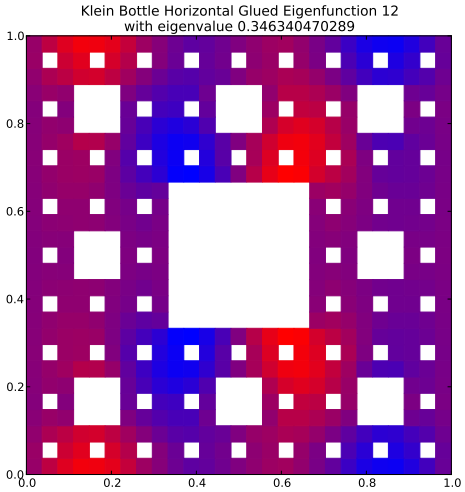


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.168367018111$
Dot Value: 0.011037897483484604

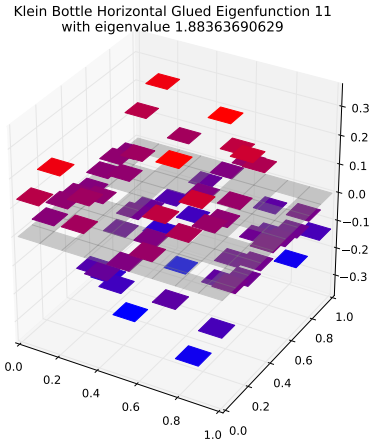
13 $M = 3$ Eigenfunction 12

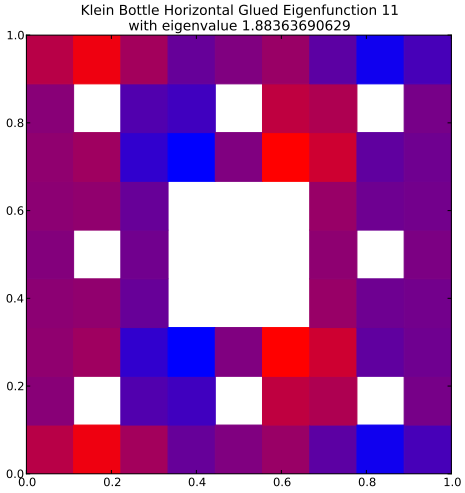
$M = 3$ Eigenfunction 12 has eigenvalue 0.346340470289





Compare to $m = 2$ eigenspace with eigenvalue 1.88363690629

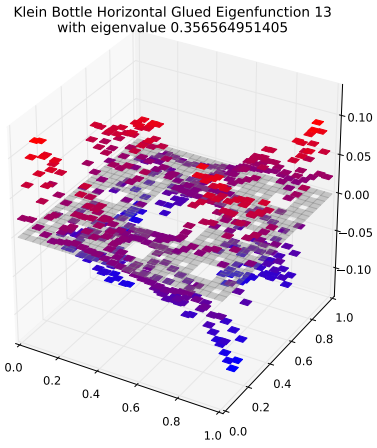


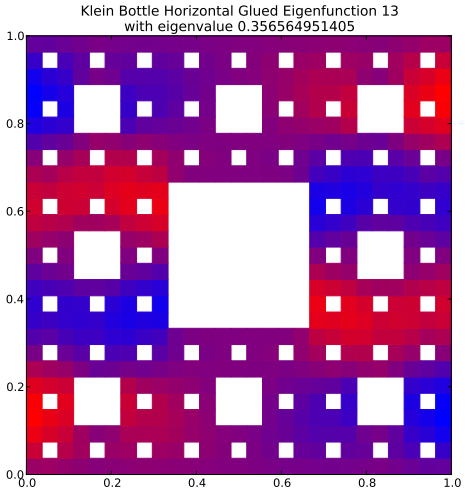


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.183867957318$
Dot Value: 0.004090726671721723

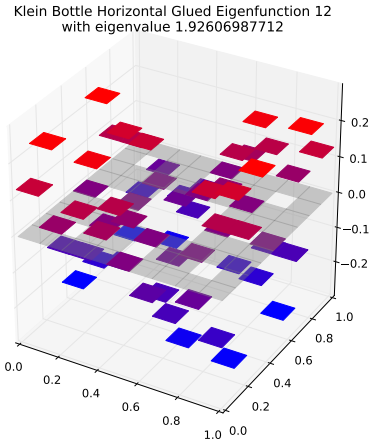
14 $M = 3$ Eigenfunction 13

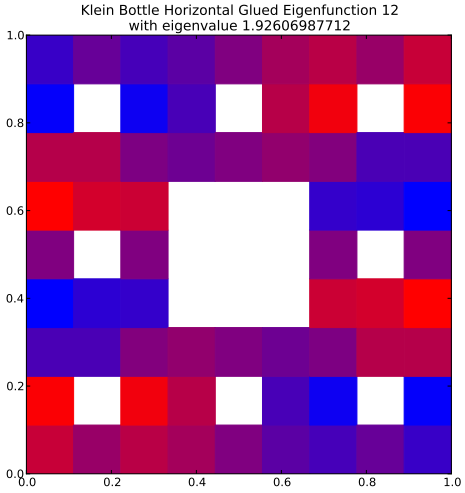
$M = 3$ Eigenfunction 13 has eigenvalue 0.356564951405





Compare to $m = 2$ eigenspace with eigenvalue 1.92606987712

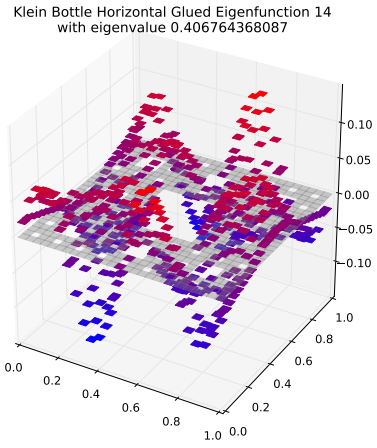


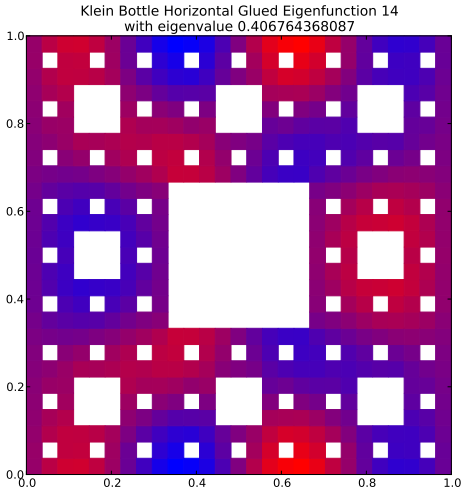


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.185125656987$
Dot Value: 0.08910903449335483

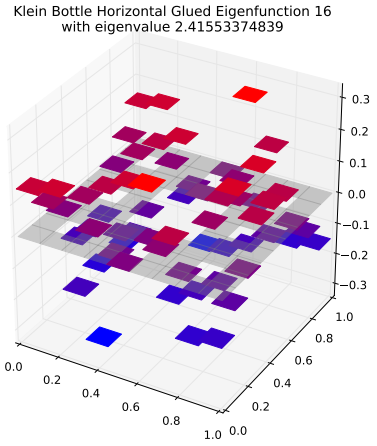
15 $M = 3$ Eigenfunction 14

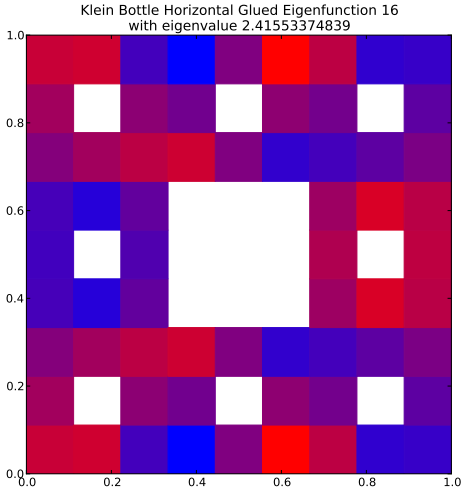
$M = 3$ Eigenfunction 14 has eigenvalue 0.406764368087





Compare to $m = 2$ eigenspace with eigenvalue 2.41553374839

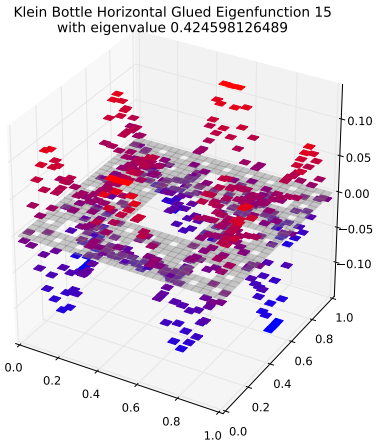


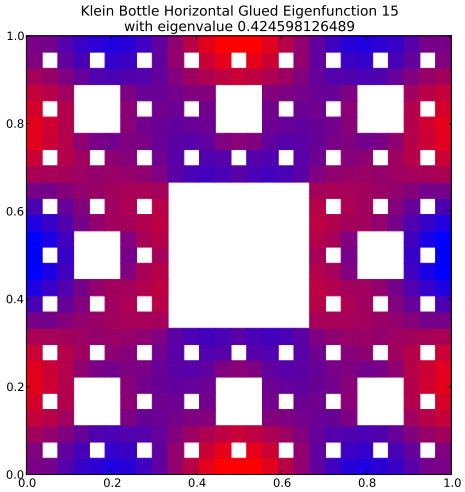


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.168395232879$
Dot Value: 0.005514441531876635

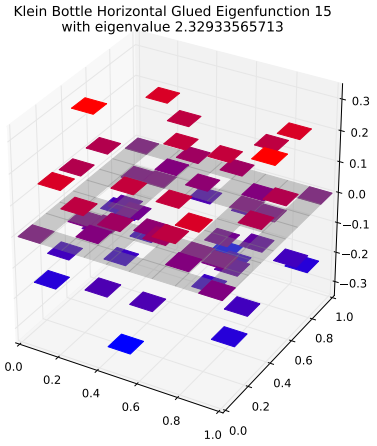
16 $M = 3$ Eigenfunction 15

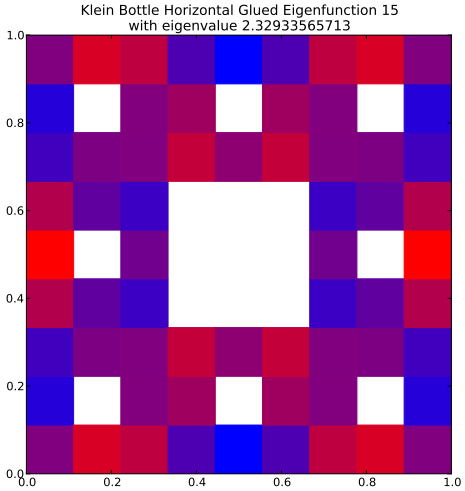
$M = 3$ Eigenfunction 15 has eigenvalue 0.424598126489





Compare to $m = 2$ eigenspace with eigenvalue 2.32933565713

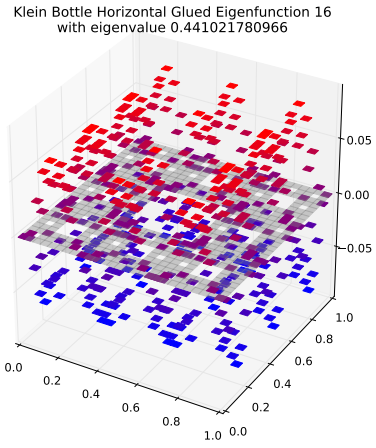


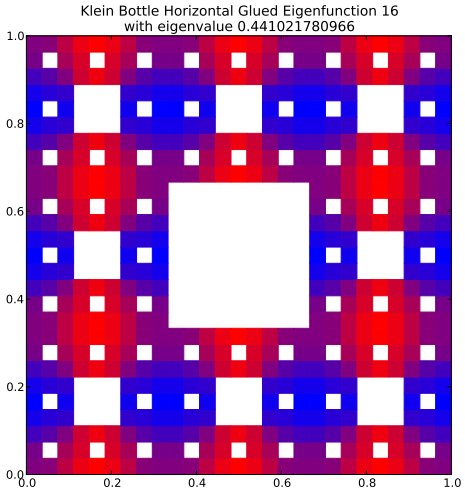


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.182282929122$
Dot Value: 0.0133376468314221 34

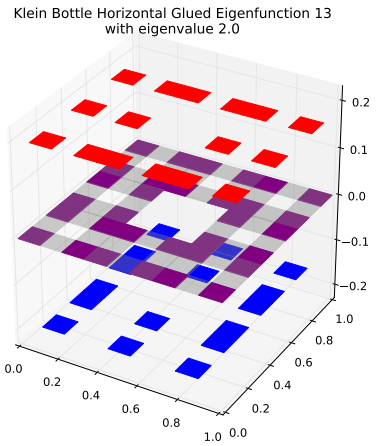
17 $M = 3$ Eigenfunction 16

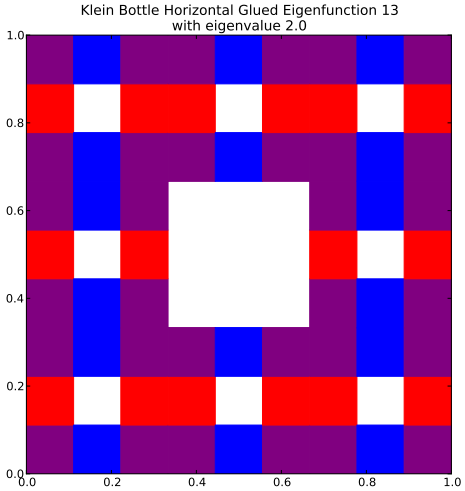
$M = 3$ Eigenfunction 16 has eigenvalue 0.441021780966





Compare to $m = 2$ eigenspace with eigenvalue 2.0

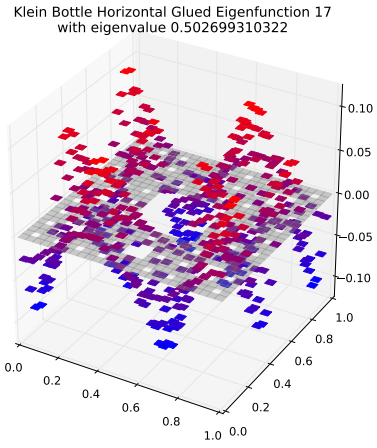


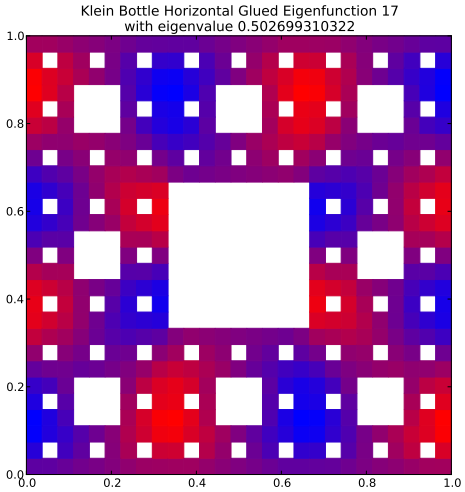


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.220510890483$
Dot Value: 1.1102230246251565e-16

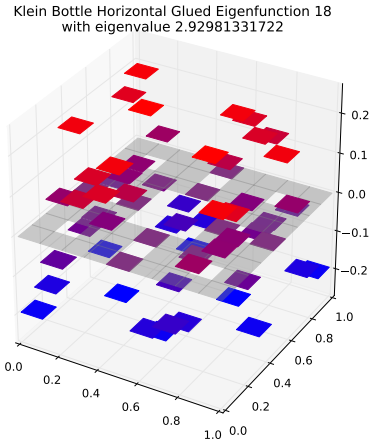
18 $M = 3$ Eigenfunction 17

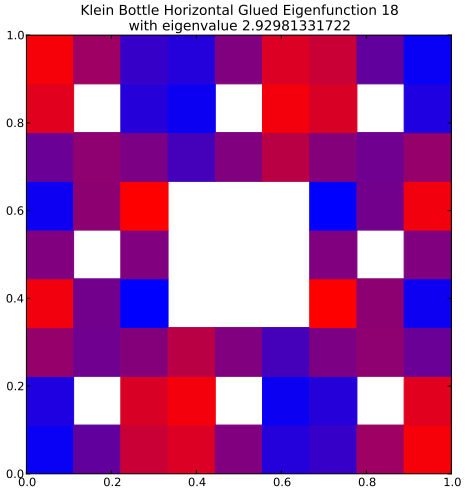
$M = 3$ Eigenfunction 17 has eigenvalue 0.502699310322





Compare to $m = 2$ eigenspace with eigenvalue 2.92981331722

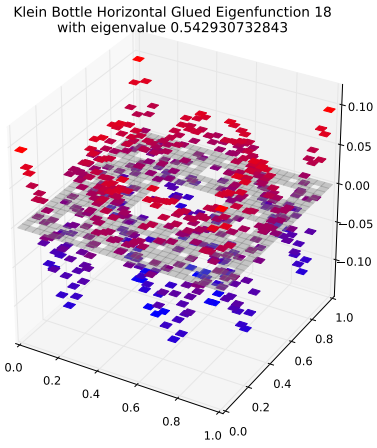


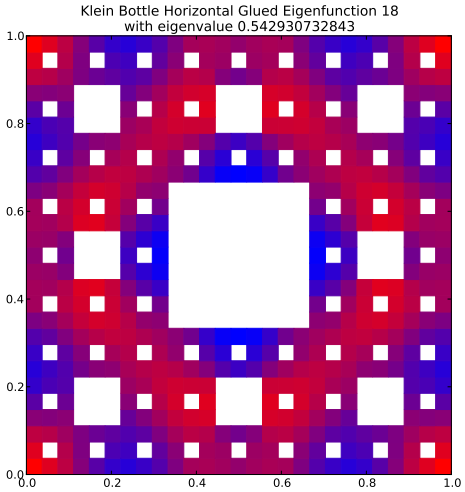


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.17158066262$
Dot Value: 0.006241499711309606

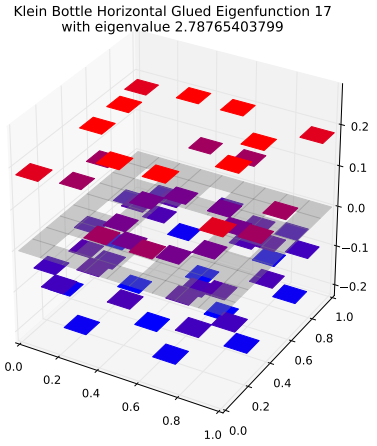
19 $M = 3$ Eigenfunction 18

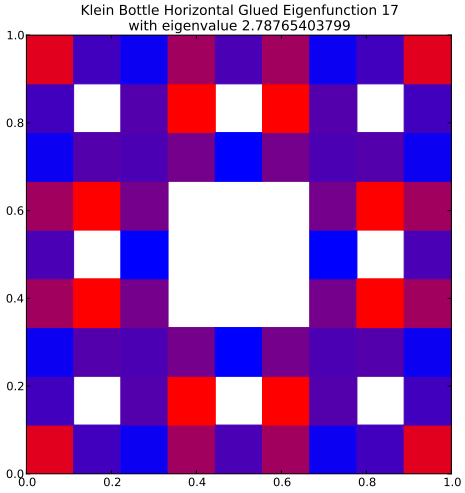
$M = 3$ Eigenfunction 18 has eigenvalue 0.542930732843





Compare to $m = 2$ eigenspace with eigenvalue 2.78765403799

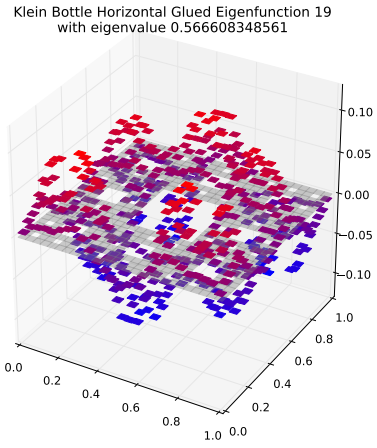


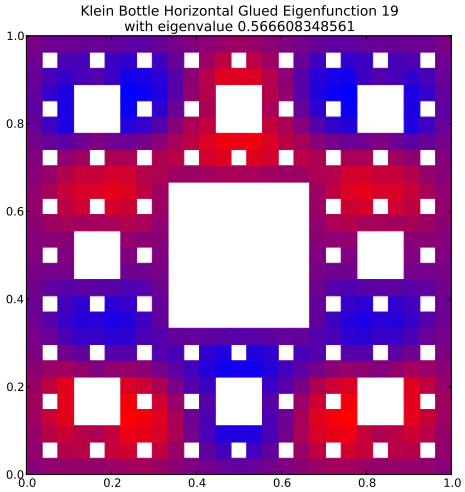


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.194762594441$
Dot Value: 0.11830647910249703

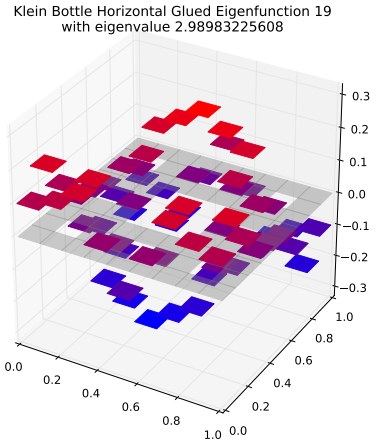
20 $M = 3$ Eigenfunction 19

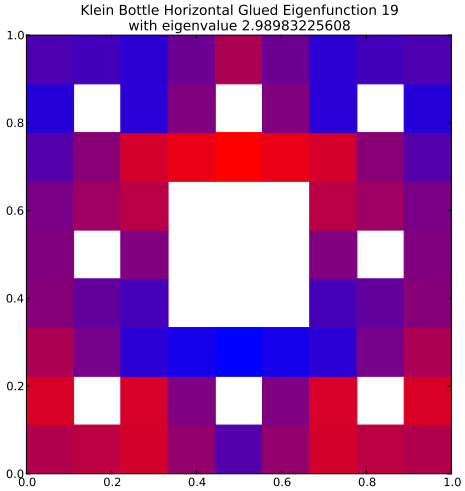
$M = 3$ Eigenfunction 19 has eigenvalue 0.566608348561





Compare to $m = 2$ eigenspace with eigenvalue 2.98983225608

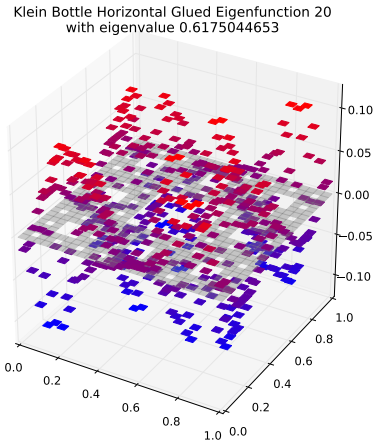


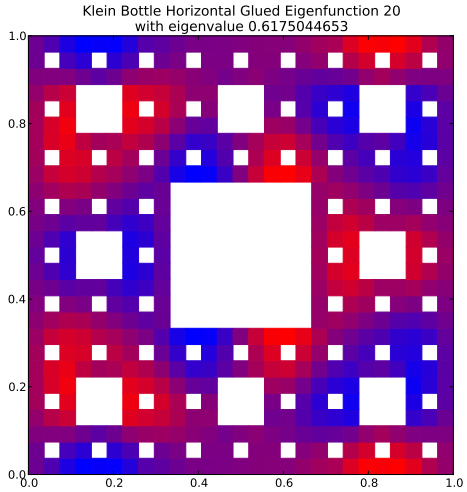


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.189511751841$
Dot Value: 0.13082409185296662

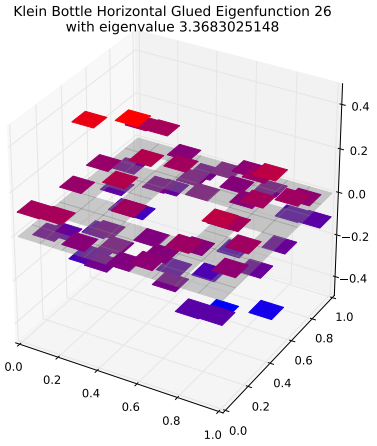
21 $M = 3$ Eigenfunction 20

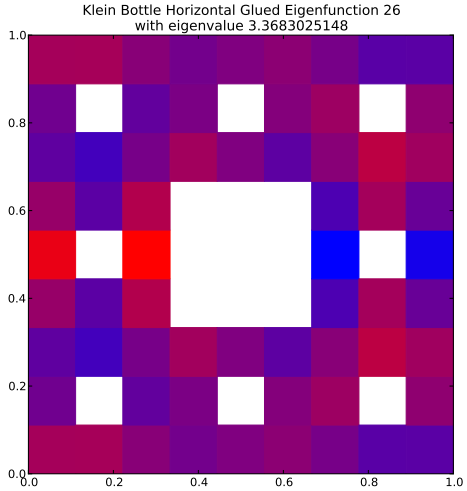
$M = 3$ Eigenfunction 20 has eigenvalue 0.6175044653





Compare to $m = 2$ eigenspace with eigenvalue 3.3683025148

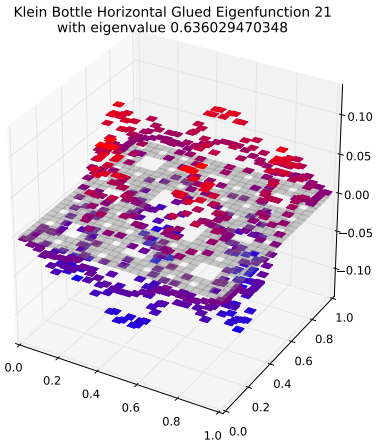


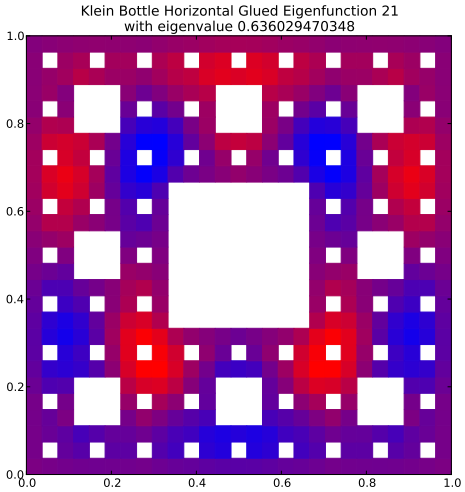


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.18332808962$
Dot Value: 0.25247824050527956

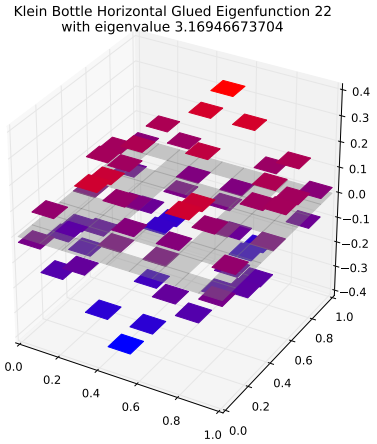
22 $M = 3$ Eigenfunction 21

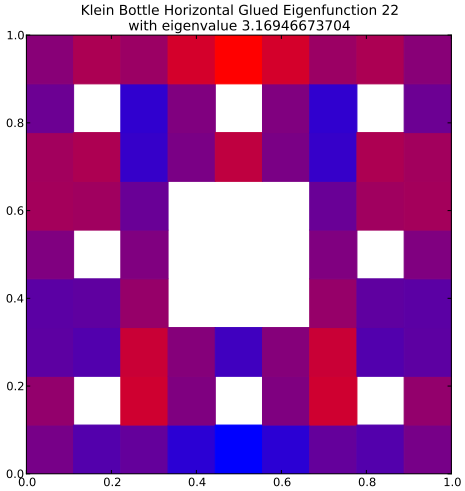
$M = 3$ Eigenfunction 21 has eigenvalue 0.636029470348





Compare to $m = 2$ eigenspace with eigenvalue 3.16946673704

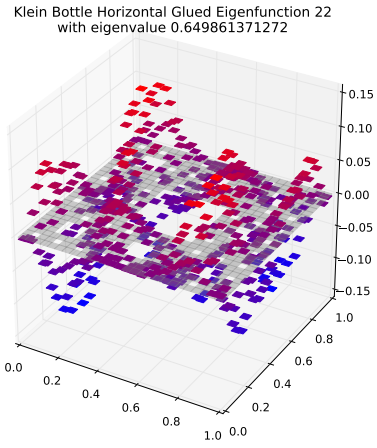


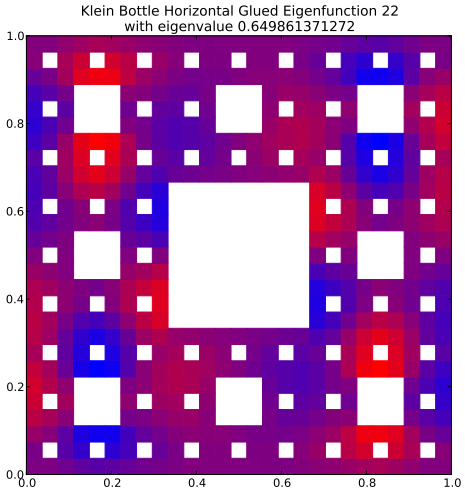


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.200673969193$
Dot Value: 0.15402010369246466

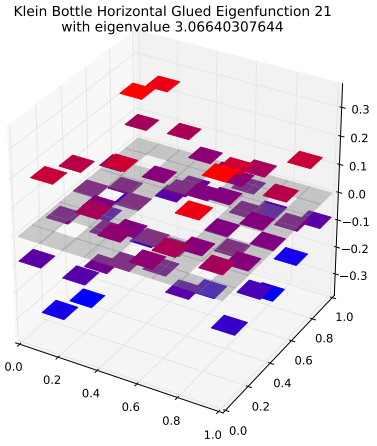
23 $M = 3$ Eigenfunction 22

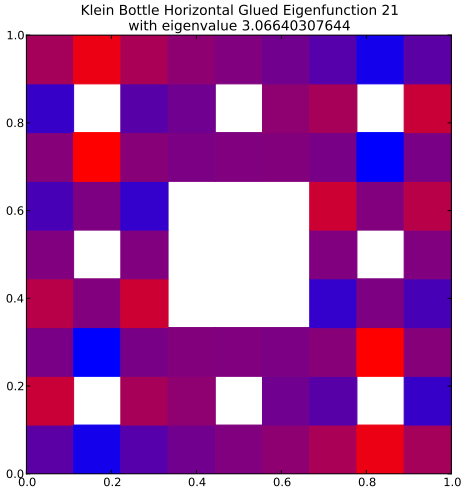
$M = 3$ Eigenfunction 22 has eigenvalue 0.649861371272





Compare to $m = 2$ eigenspace with eigenvalue 3.06640307644

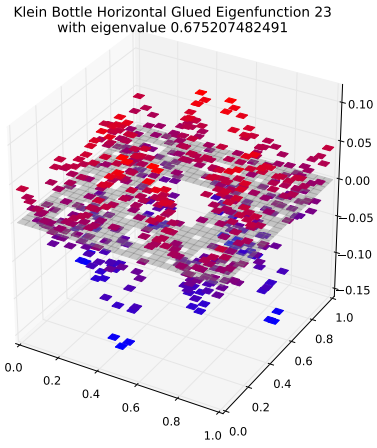


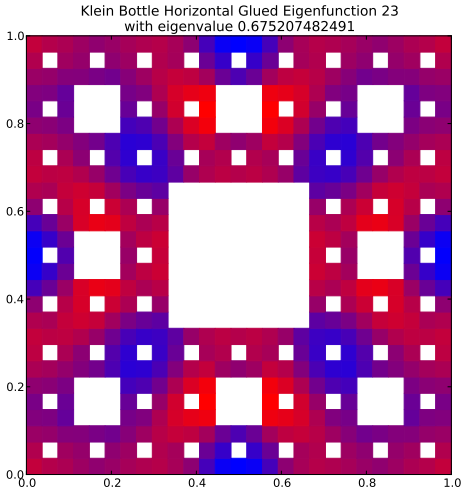


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.211929532769$
Dot Value: 0.061781236190881494

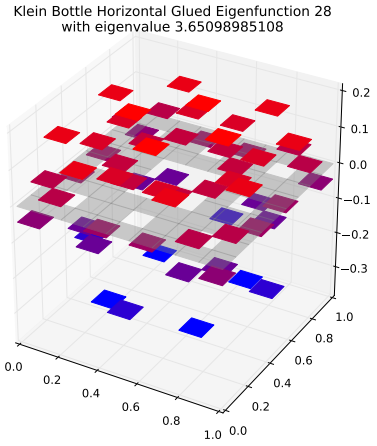
24 $M = 3$ Eigenfunction 23

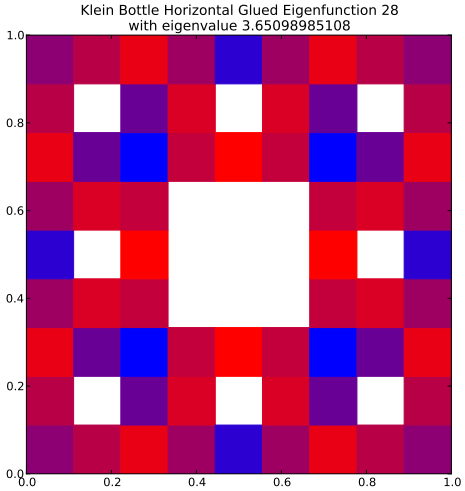
$M = 3$ Eigenfunction 23 has eigenvalue 0.675207482491





Compare to $m = 2$ eigenspace with eigenvalue 3.65098985108

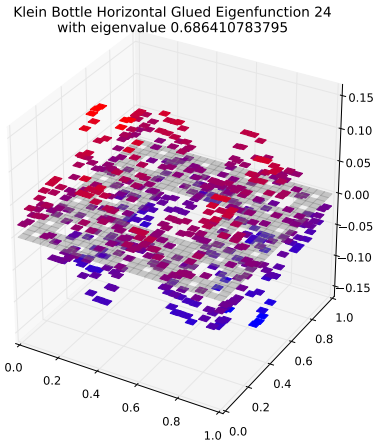


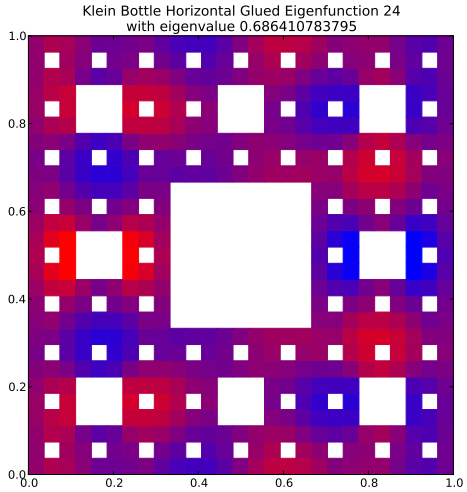


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.184938197594$
Dot Value: 0.1350729871903632

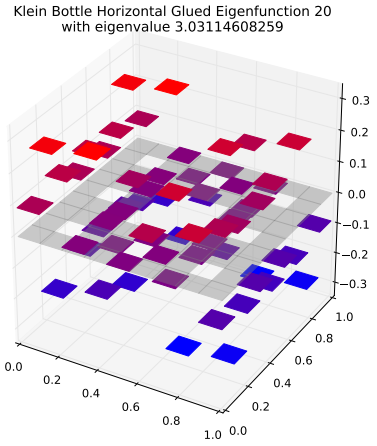
25 $M = 3$ Eigenfunction 24

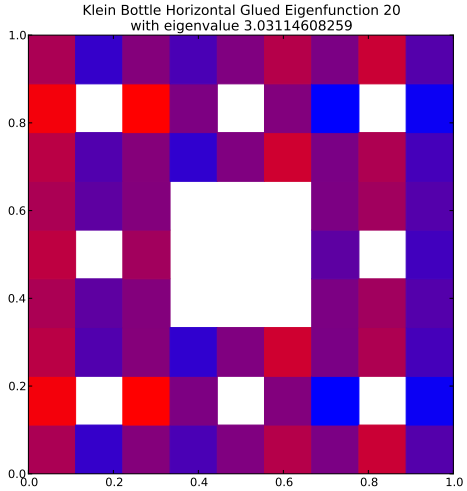
$M = 3$ Eigenfunction 24 has eigenvalue 0.686410783795





Compare to $m = 2$ eigenspace with eigenvalue 3.03114608259

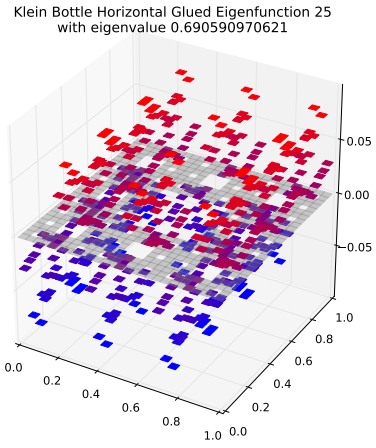


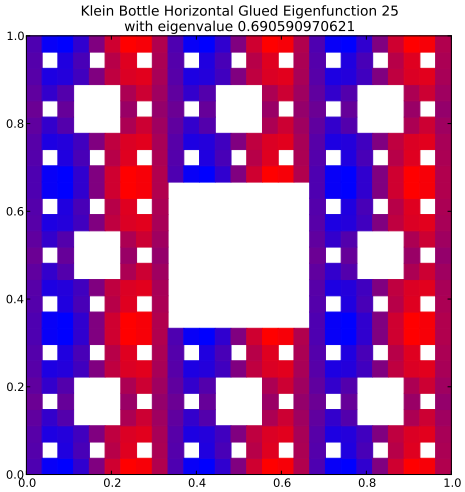


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.226452557908$
Dot Value: 0.23316645227194455

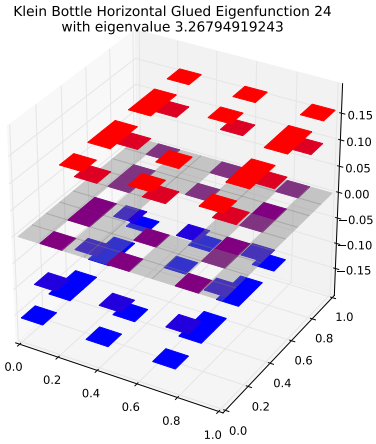
26 $M = 3$ Eigenfunction 25

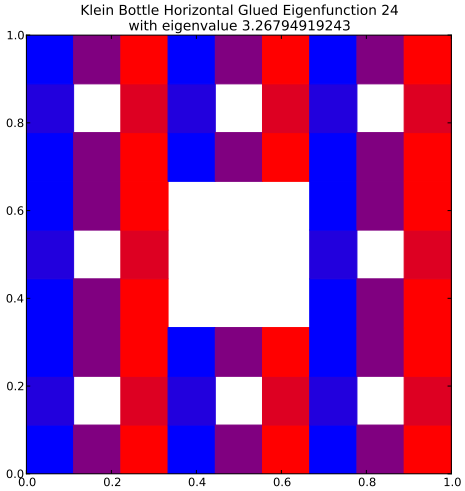
$M = 3$ Eigenfunction 25 has eigenvalue 0.690590970621





Compare to $m = 2$ eigenspace with eigenvalue 3.26794919243

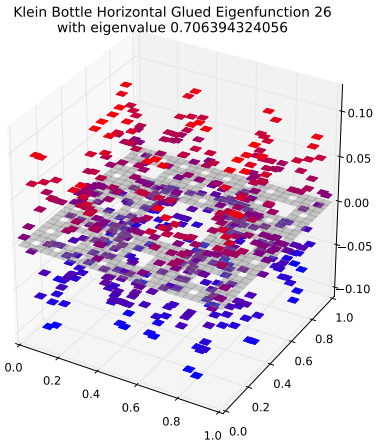


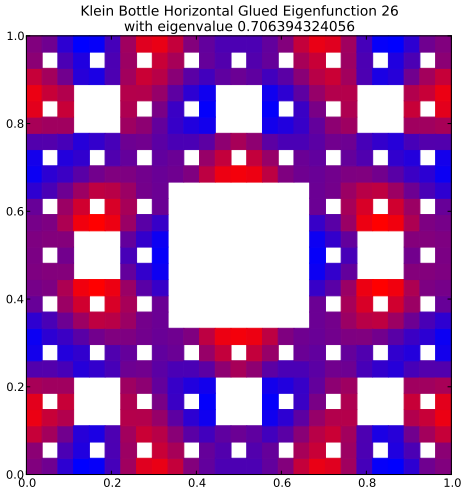


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.211322431885$
Dot Value: 0.007208422818863469

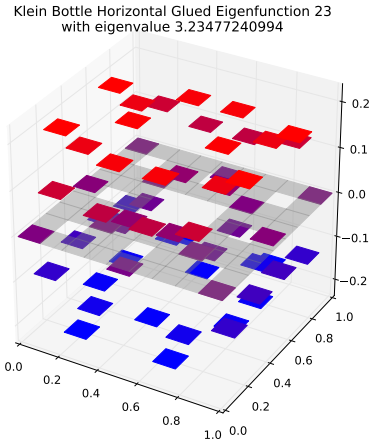
27 $M = 3$ Eigenfunction 26

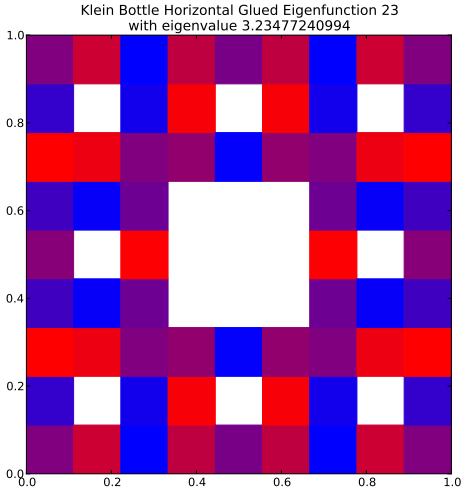
$M = 3$ Eigenfunction 26 has eigenvalue 0.706394324056





Compare to $m = 2$ eigenspace with eigenvalue 3.23477240994

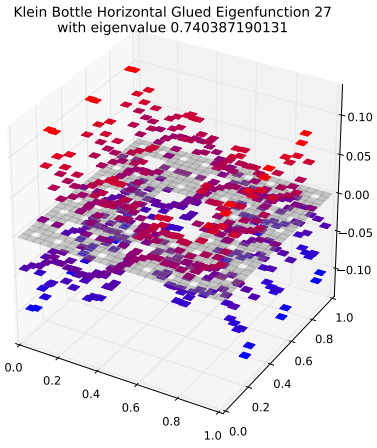


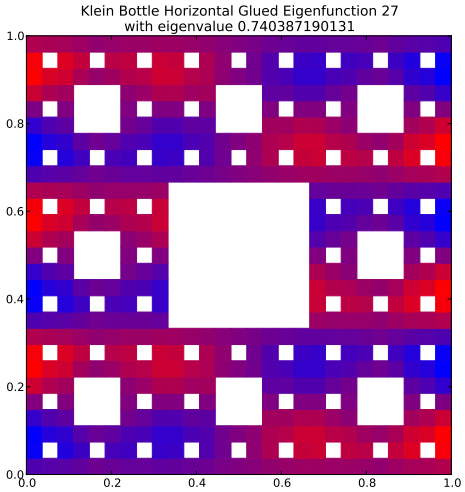


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.218375277928$
Dot Value: 0.10046186052377393

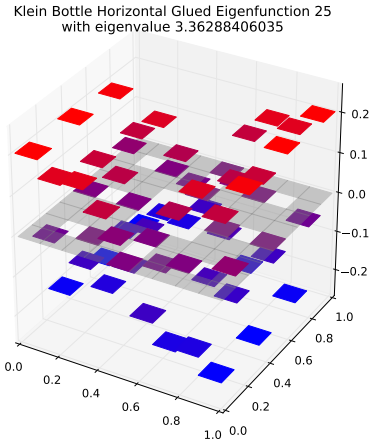
28 $M = 3$ Eigenfunction 27

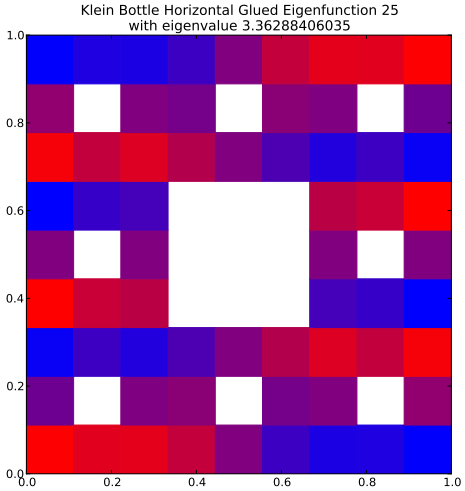
$M = 3$ Eigenfunction 27 has eigenvalue 0.740387190131





Compare to $m = 2$ eigenspace with eigenvalue 3.36288406035

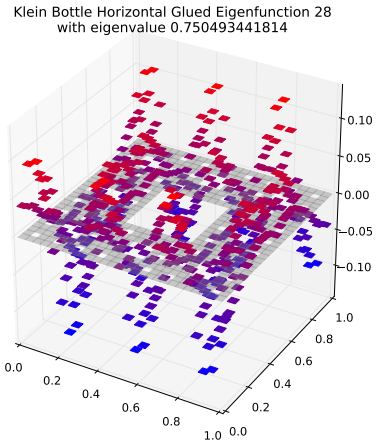


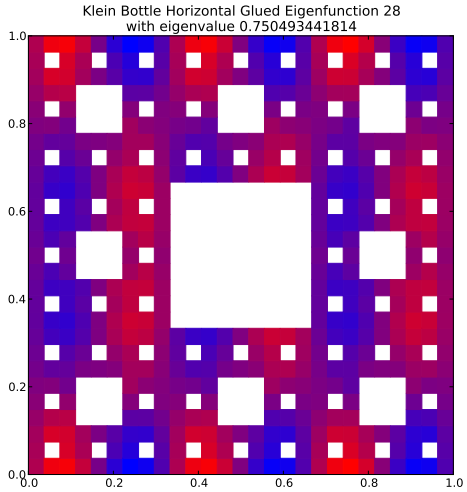


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.22016435204$
Dot Value: 0.019977467290337114

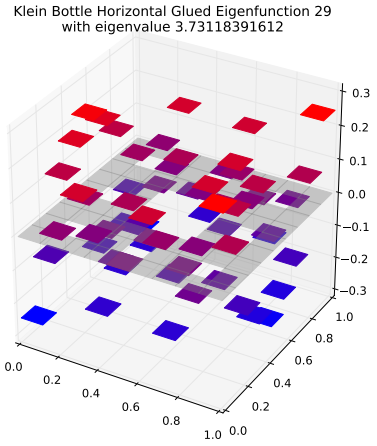
29 $M = 3$ Eigenfunction 28

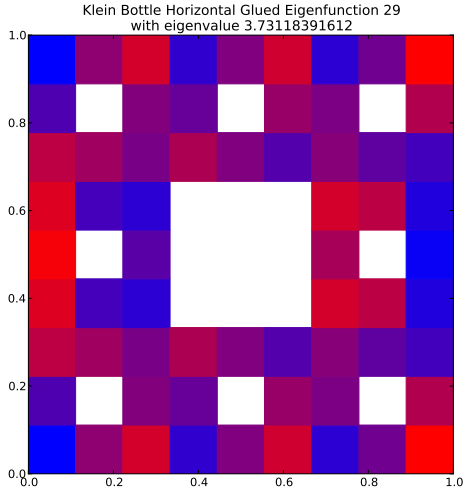
$M = 3$ Eigenfunction 28 has eigenvalue 0.750493441814





Compare to $m = 2$ eigenspace with eigenvalue 3.73118391612

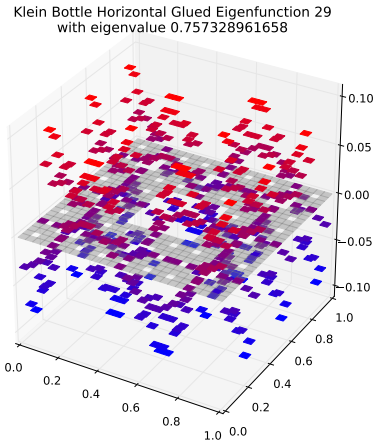


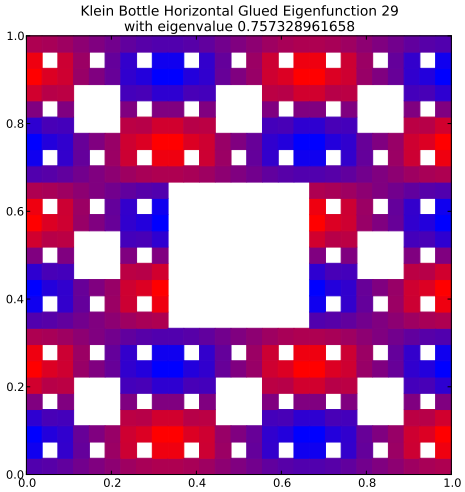


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.201140833228$
Dot Value: 0.09871017803940663

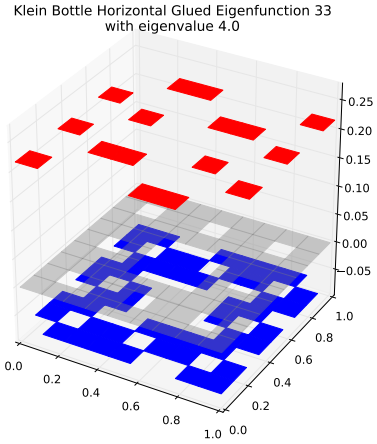
30 $M = 3$ Eigenfunction 29

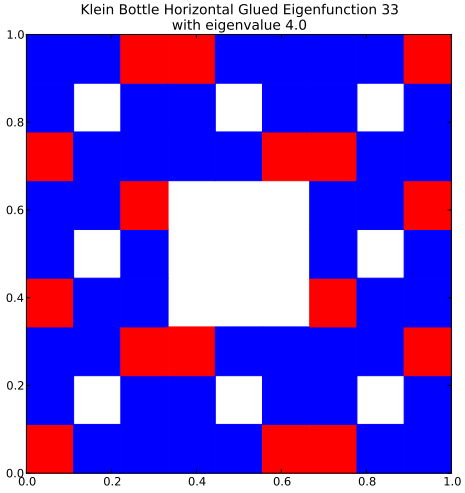
$M = 3$ Eigenfunction 29 has eigenvalue 0.757328961658





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

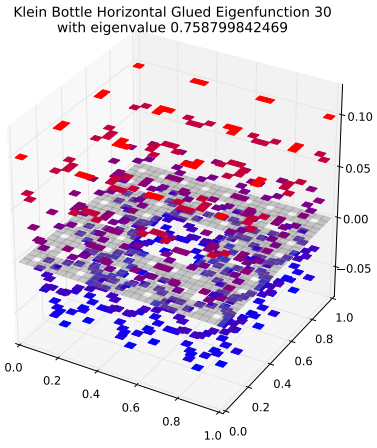


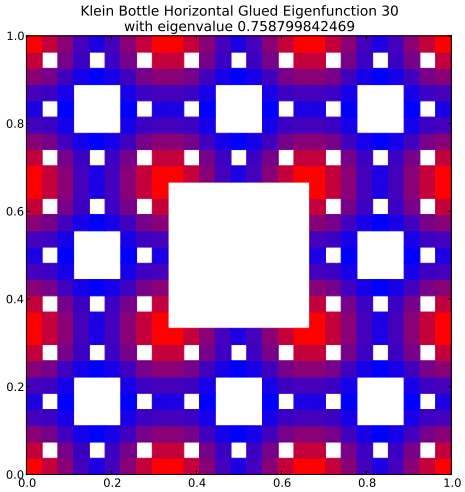


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.189332240415$
Dot Value: 0.0

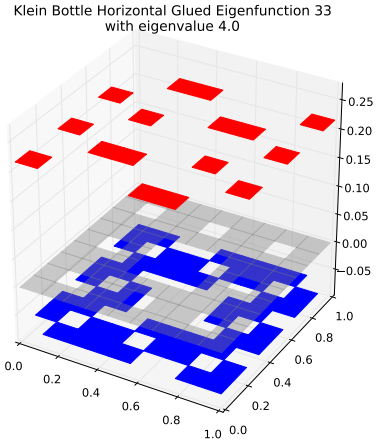
31 $M = 3$ Eigenfunction 30

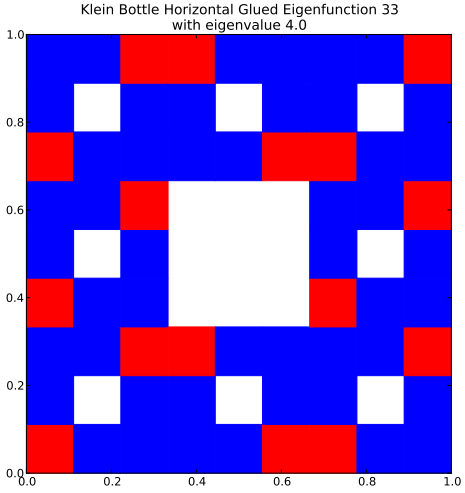
$M = 3$ Eigenfunction 30 has eigenvalue 0.758799842469





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

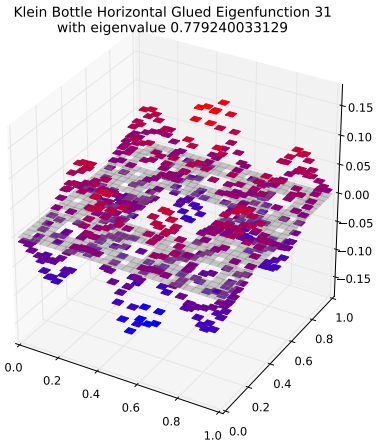


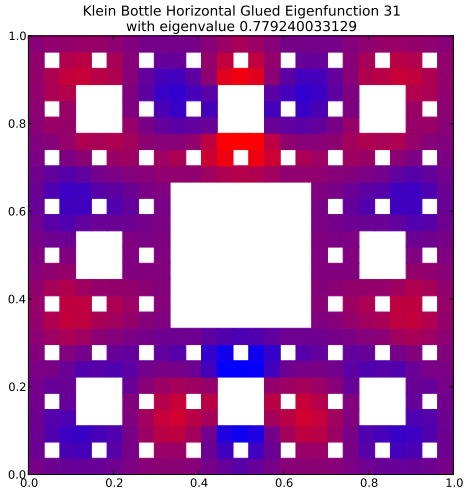


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.189699960617$
Dot Value: 0.0

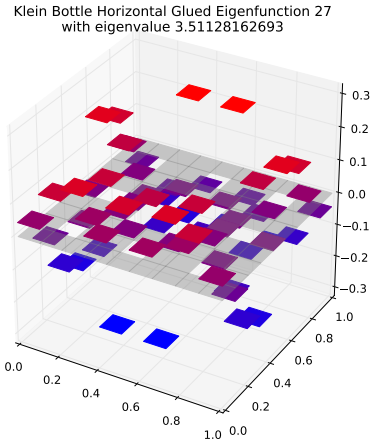
32 $M = 3$ Eigenfunction 31

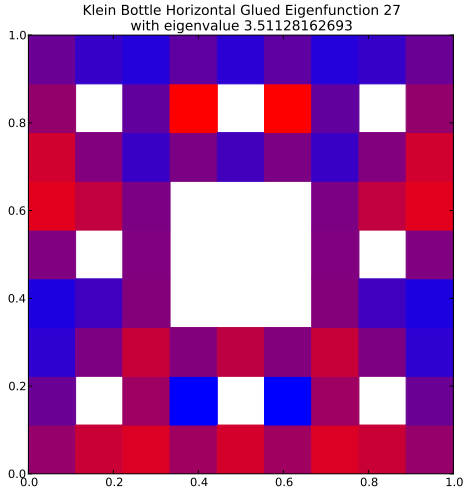
$M = 3$ Eigenfunction 31 has eigenvalue 0.779240033129





Compare to $m = 2$ eigenspace with eigenvalue 3.51128162693

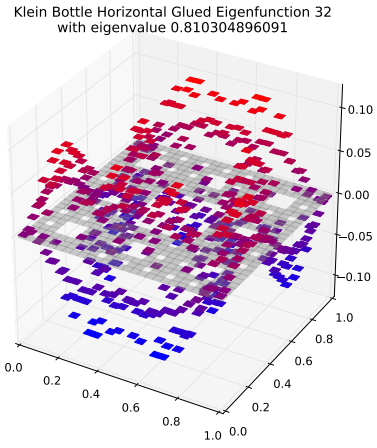


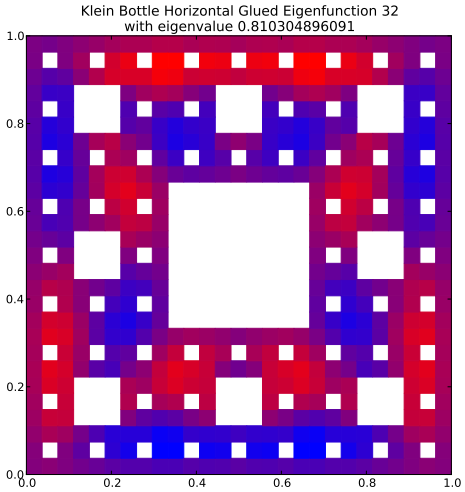


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.221924674783$
Dot Value: 0.37599425933930164

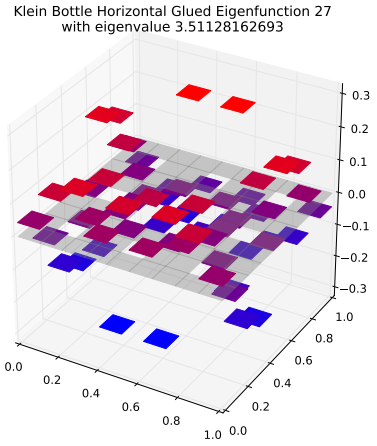
33 $M = 3$ Eigenfunction 32

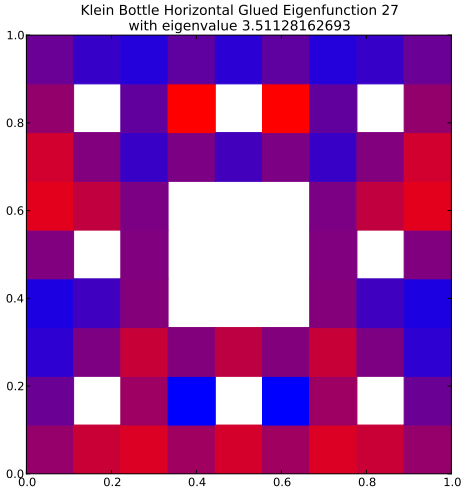
$M = 3$ Eigenfunction 32 has eigenvalue 0.810304896091





Compare to $m = 2$ eigenspace with eigenvalue 3.51128162693

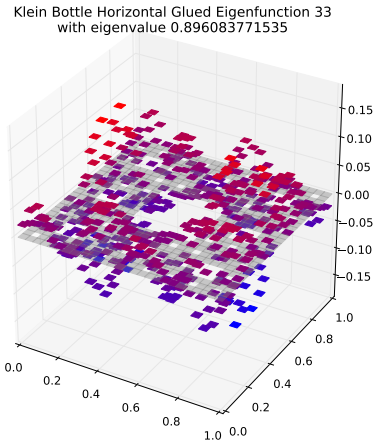


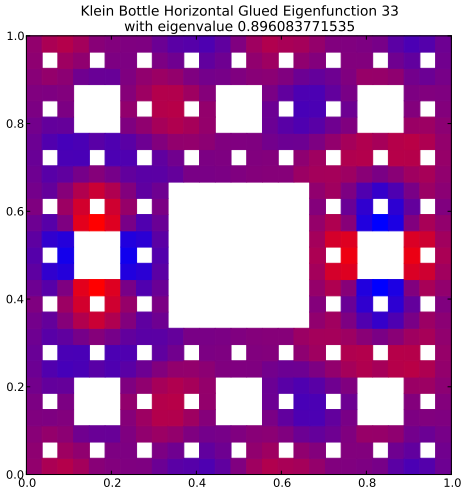


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.230771832677$
Dot Value: 0.37998690472455043

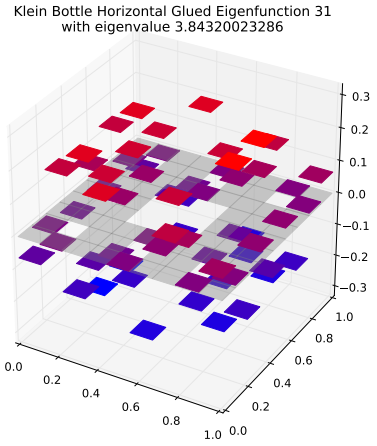
34 $M = 3$ Eigenfunction 33

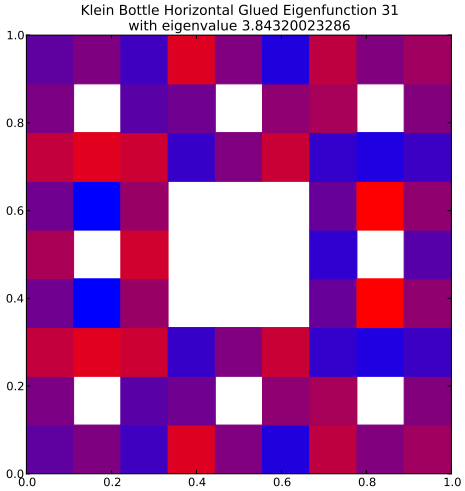
$M = 3$ Eigenfunction 33 has eigenvalue 0.896083771535





Compare to $m = 2$ eigenspace with eigenvalue 3.84320023286

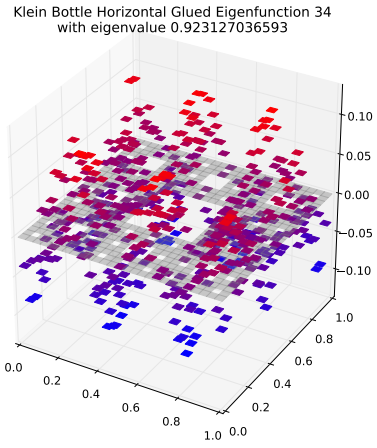


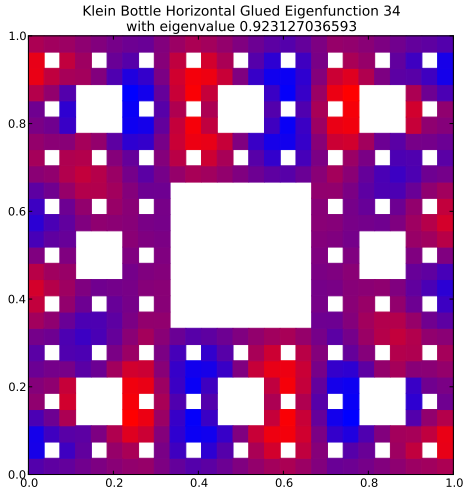


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.233160834003$
Dot Value: 0.19248424337543024

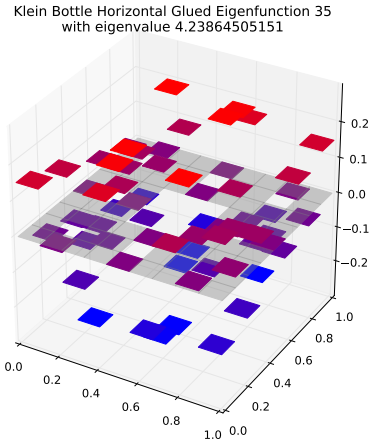
35 $M = 3$ Eigenfunction 34

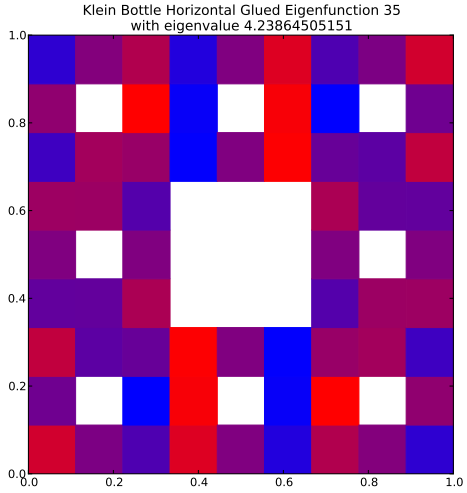
$M = 3$ Eigenfunction 34 has eigenvalue 0.923127036593





Compare to $m = 2$ eigenspace with eigenvalue 4.23864505151

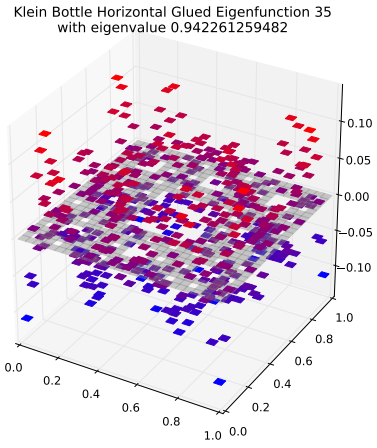


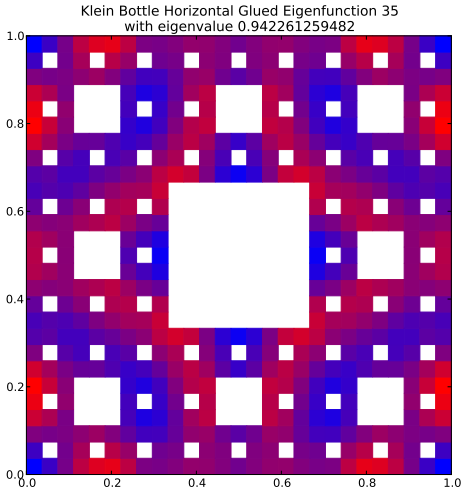


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.217788237839$
Dot Value: 0.11199410507997432

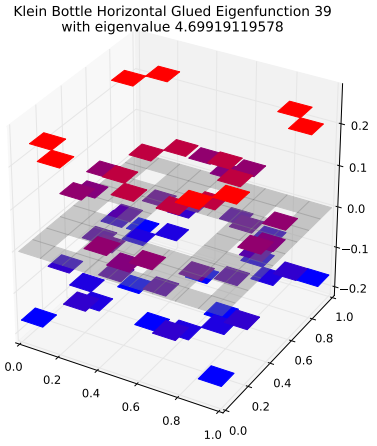
36 $M = 3$ Eigenfunction 35

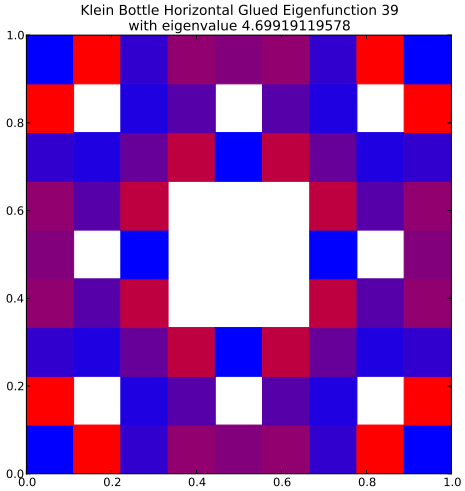
$M = 3$ Eigenfunction 35 has eigenvalue 0.942261259482





Compare to $m = 2$ eigenspace with eigenvalue 4.69919119578

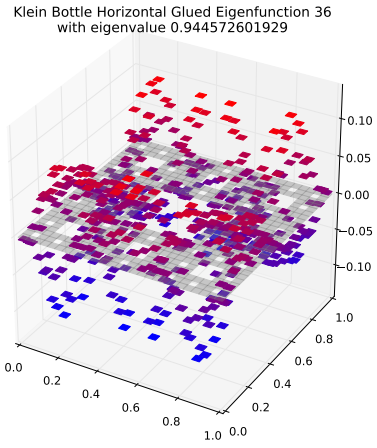


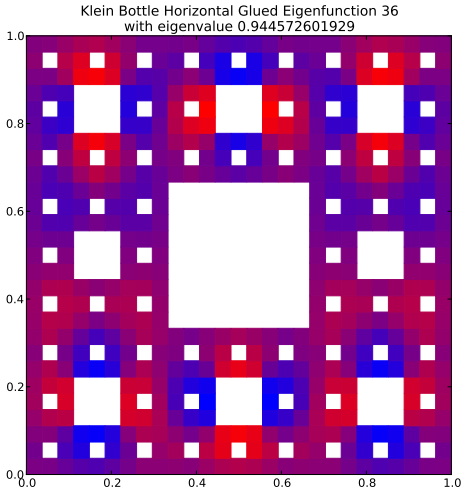


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.200515624971$
Dot Value: 0.16409481134191473

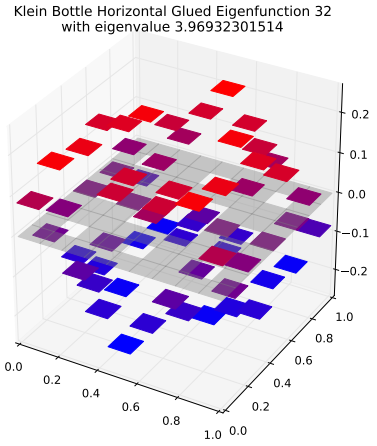
37 $M = 3$ Eigenfunction 36

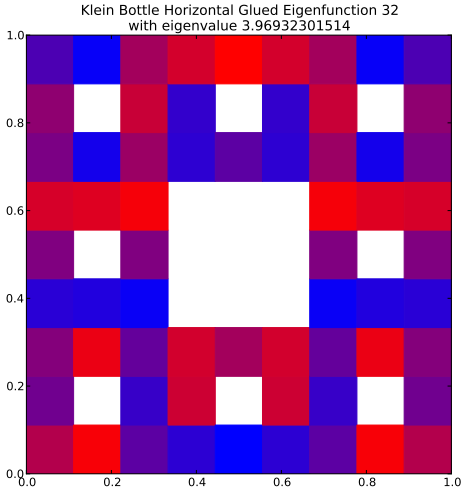
$M = 3$ Eigenfunction 36 has eigenvalue 0.944572601929





Compare to $m = 2$ eigenspace with eigenvalue 3.96932301514

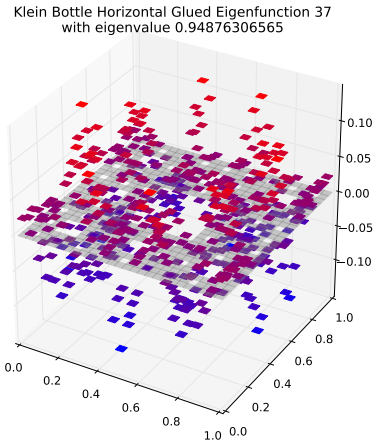


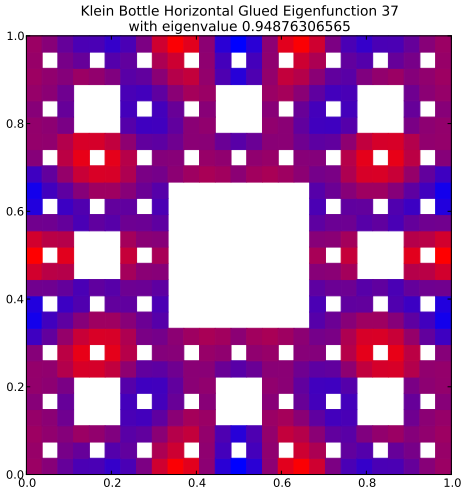


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.2379681871$
Dot Value: 0.18684722051624647

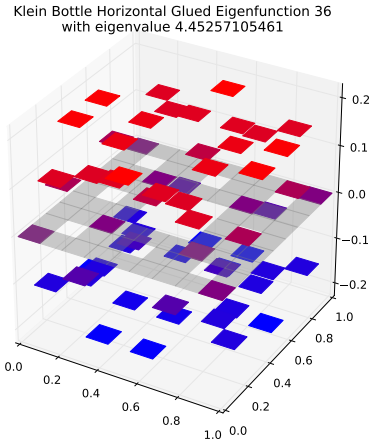
38 $M = 3$ Eigenfunction 37

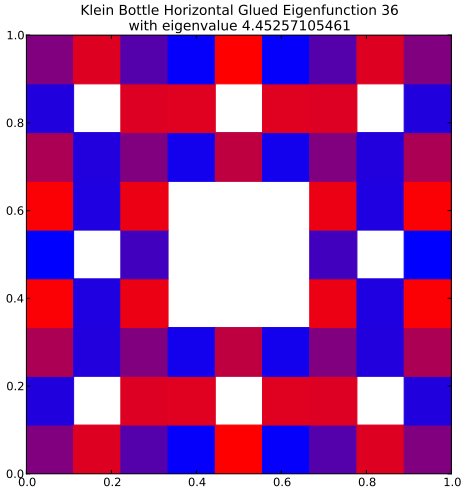
$M = 3$ Eigenfunction 37 has eigenvalue 0.94876306565





Compare to $m = 2$ eigenspace with eigenvalue 4.45257105461

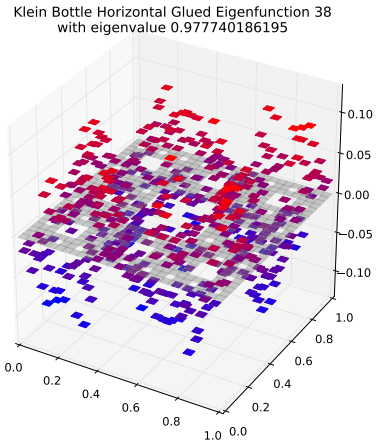


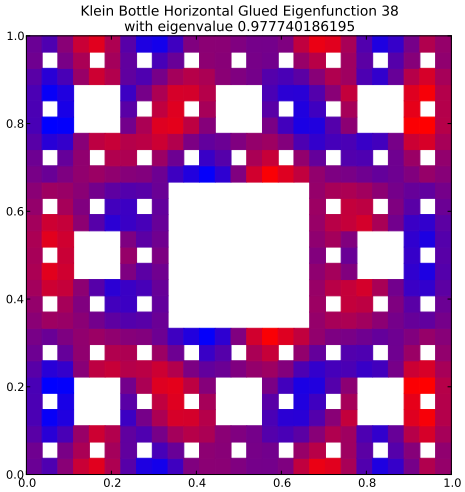


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.213082071912$
Dot Value: 0.2726867736389439

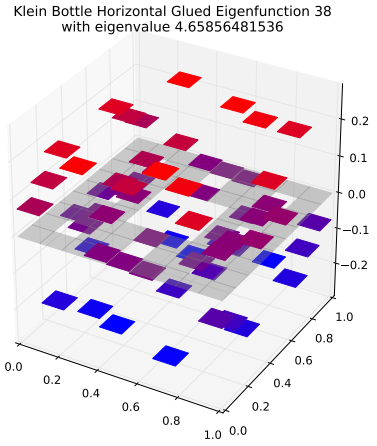
39 $M = 3$ Eigenfunction 38

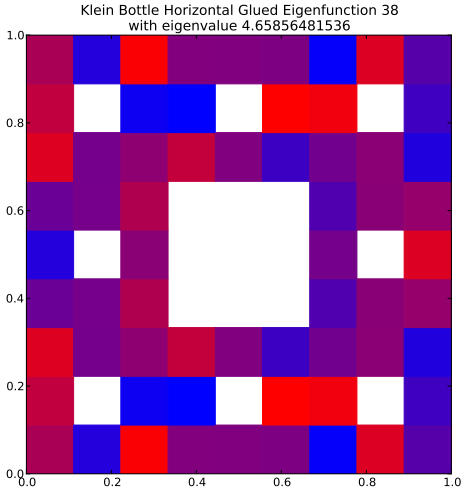
$M = 3$ Eigenfunction 38 has eigenvalue 0.977740186195





Compare to $m = 2$ eigenspace with eigenvalue 4.65856481536

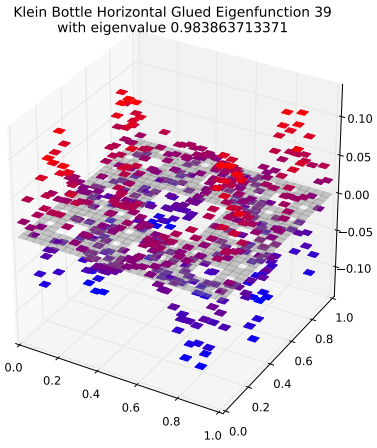


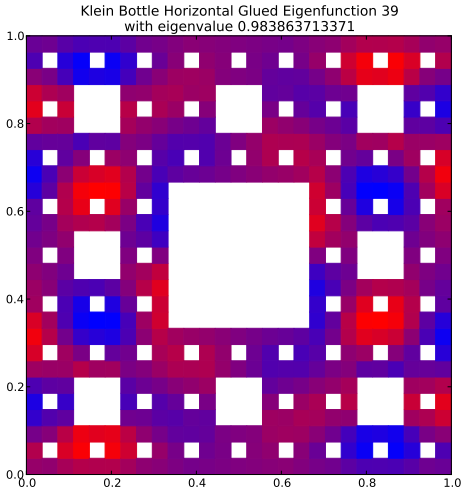


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.209880129385$
Dot Value: 0.1834840592926278

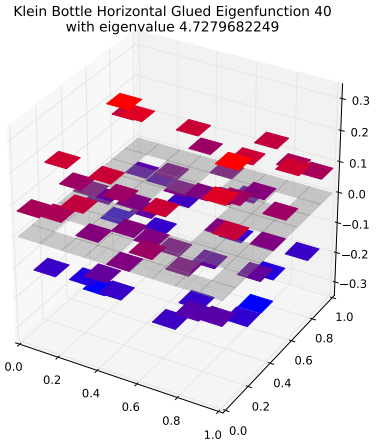
40 $M = 3$ Eigenfunction 39

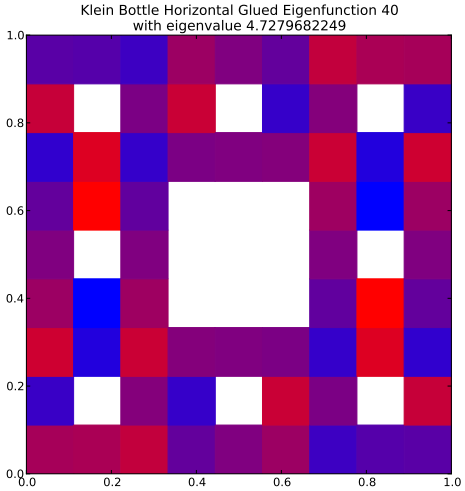
$M = 3$ Eigenfunction 39 has eigenvalue 0.983863713371





Compare to $m = 2$ eigenspace with eigenvalue 4.7279682249

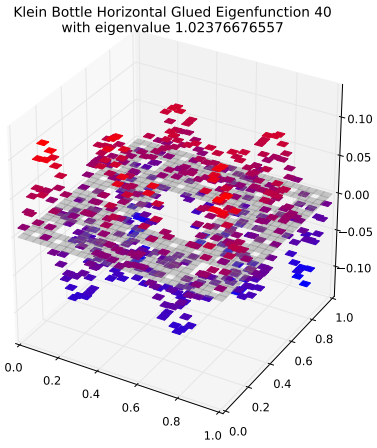


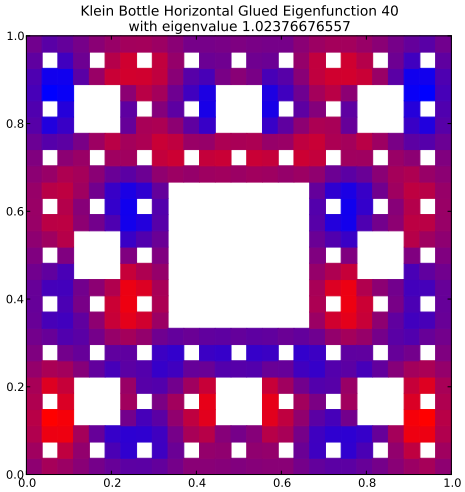


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.208094400506$
Dot Value: 0.22084566563423513

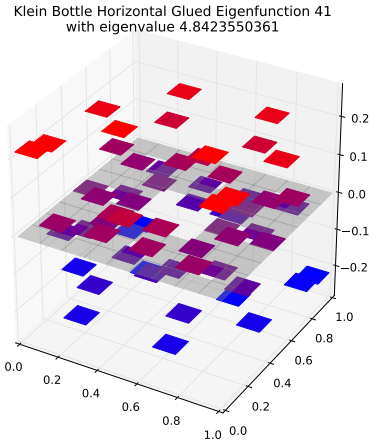
41 $M = 3$ Eigenfunction 40

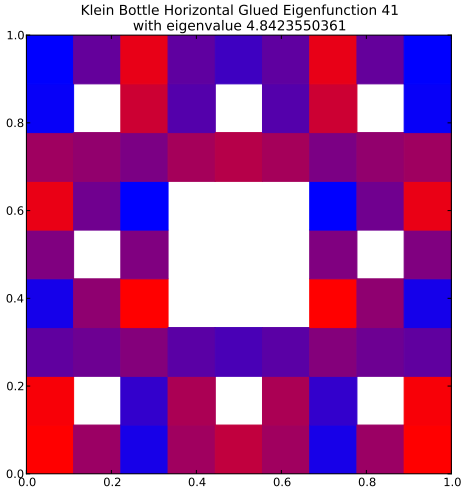
$M = 3$ Eigenfunction 40 has eigenvalue 1.02376676557





Compare to $m = 2$ eigenspace with eigenvalue 4.8423550361

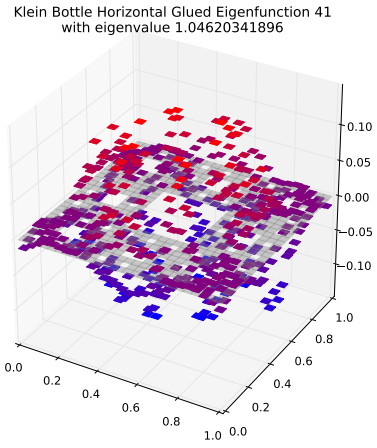


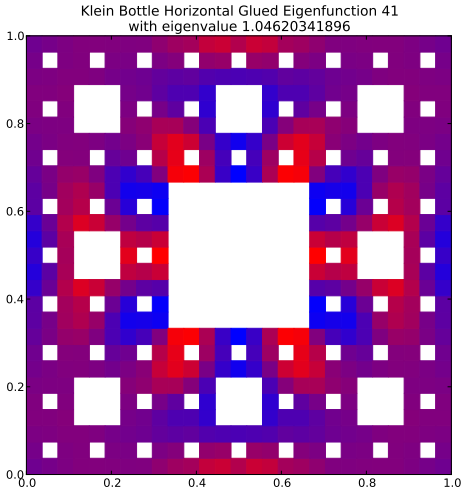


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.211419187139$
Dot Value: 0.09879751700644401

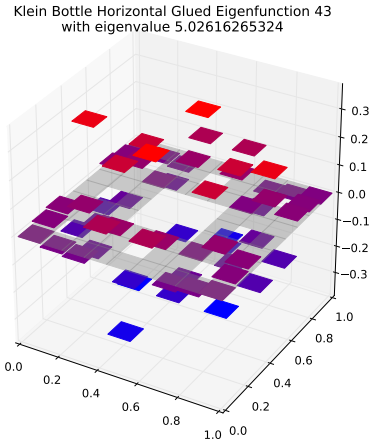
42 $M = 3$ Eigenfunction 41

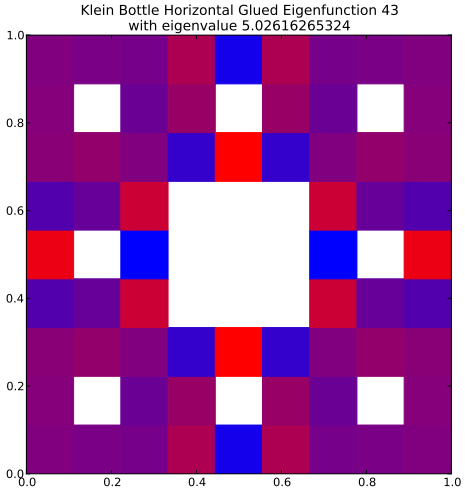
$M = 3$ Eigenfunction 41 has eigenvalue 1.04620341896





Compare to $m = 2$ eigenspace with eigenvalue 5.02616265324

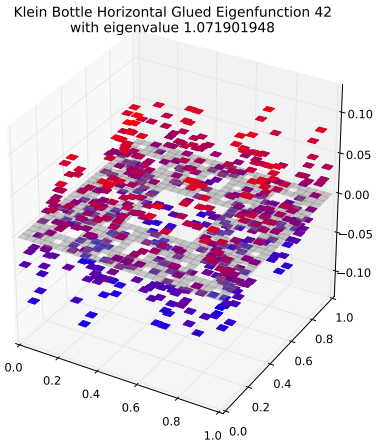


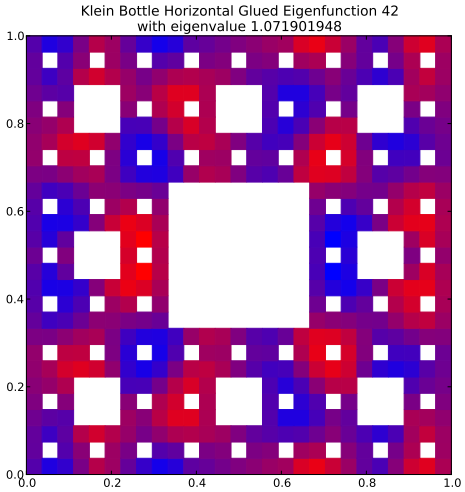


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.20815152456$
Dot Value: 0.19302480660366017

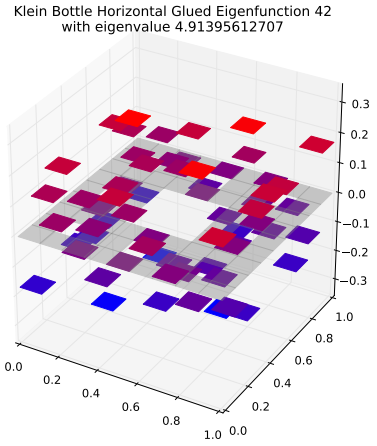
43 $M = 3$ Eigenfunction 42

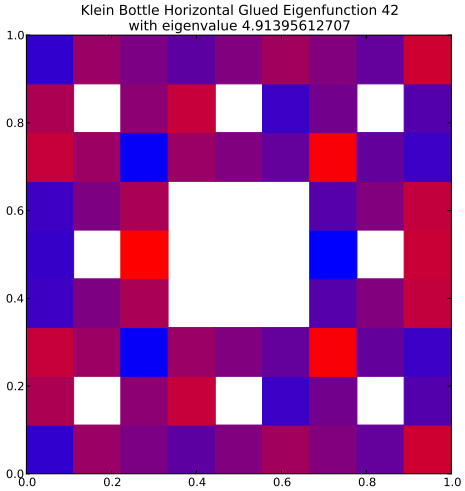
$M = 3$ Eigenfunction 42 has eigenvalue 1.071901948





Compare to $m = 2$ eigenspace with eigenvalue 4.91395612707

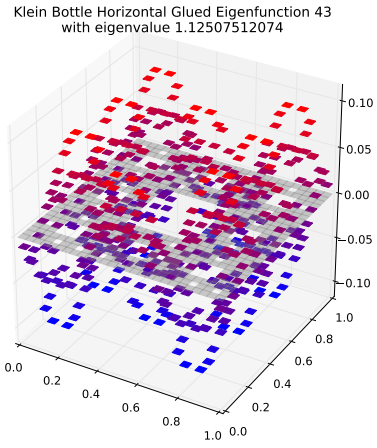


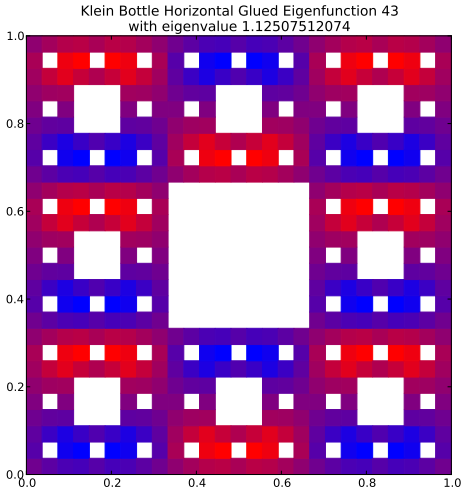


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.218134212086$
Dot Value: 0.07007729698159326

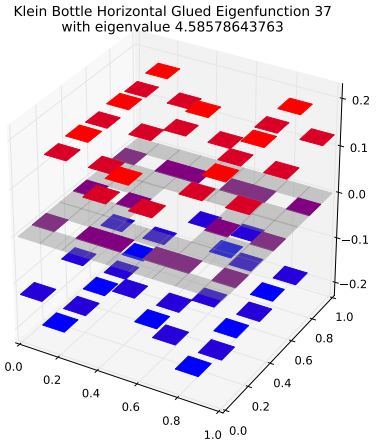
44 $M = 3$ Eigenfunction 43

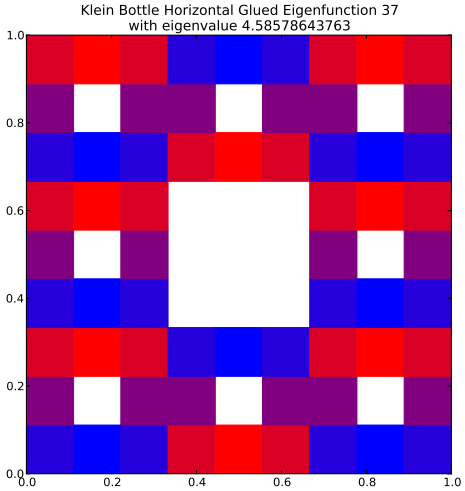
$M = 3$ Eigenfunction 43 has eigenvalue 1.12507512074





Compare to $m = 2$ eigenspace with eigenvalue 4.58578643763

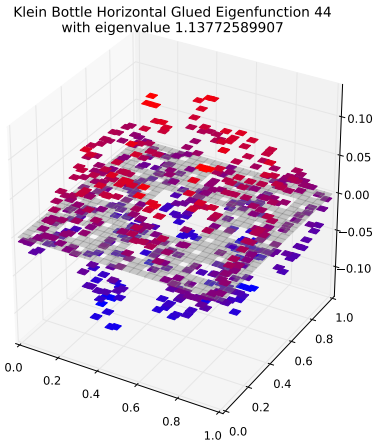


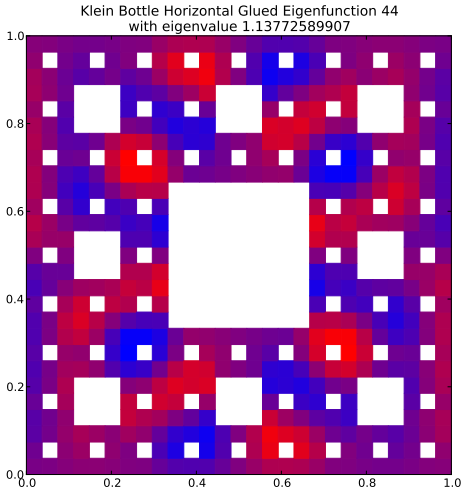


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.245339624085$
Dot Value: 0.0006505301638103367

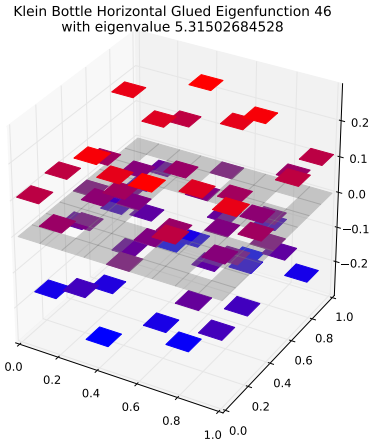
45 $M = 3$ Eigenfunction 44

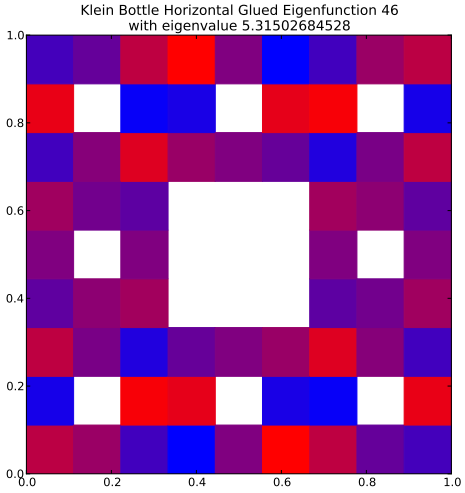
$M = 3$ Eigenfunction 44 has eigenvalue 1.13772589907





Compare to $m = 2$ eigenspace with eigenvalue 5.31502684528

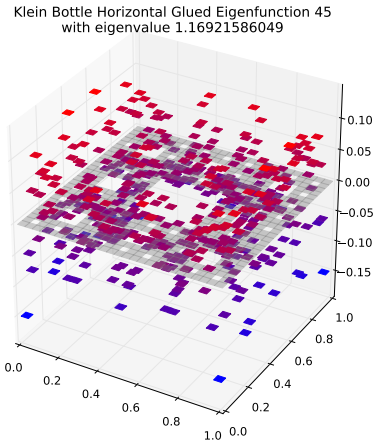


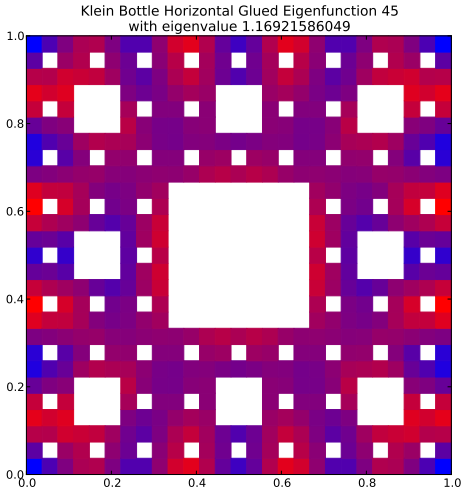


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.214058354208$
Dot Value: 0.2958935896209792

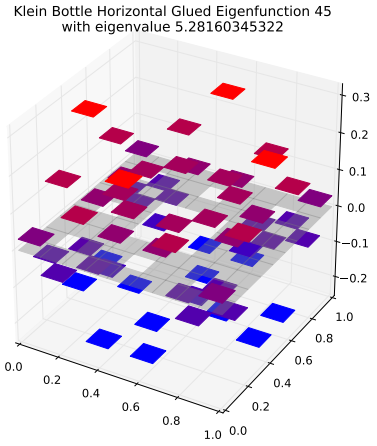
46 $M = 3$ Eigenfunction 45

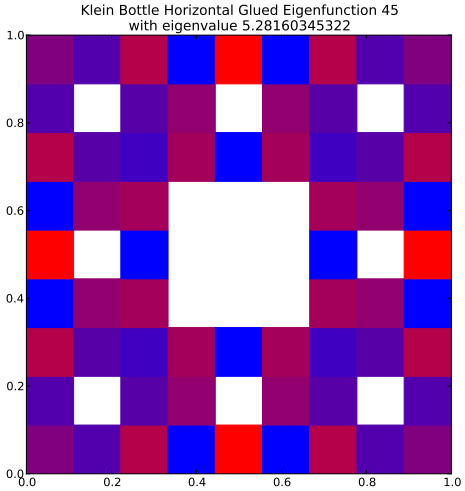
$M = 3$ Eigenfunction 45 has eigenvalue 1.16921586049





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

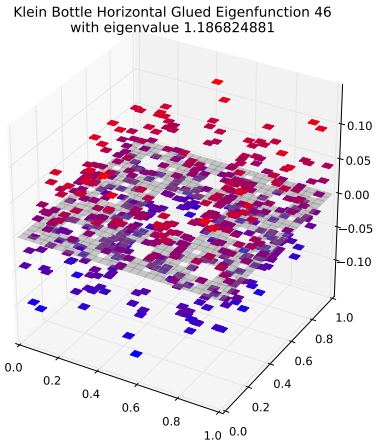


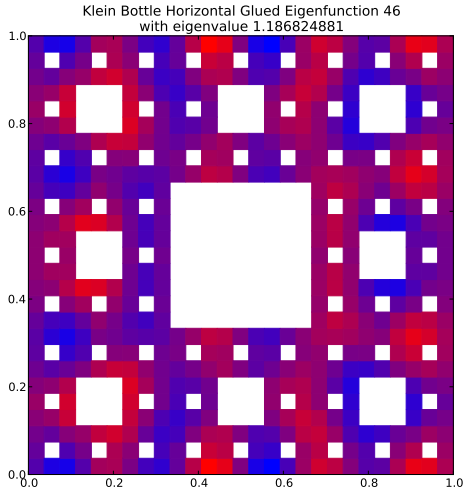


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.221375169652$
Dot Value: 0.18000713951216196

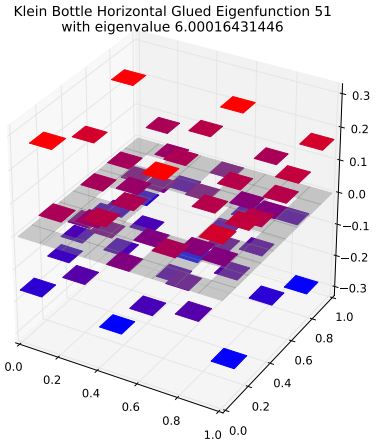
47 $M = 3$ Eigenfunction 46

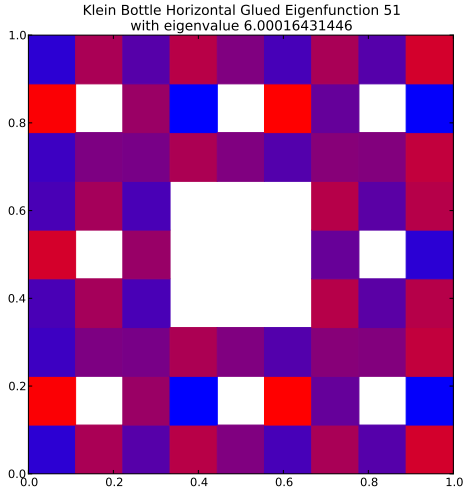
$M = 3$ Eigenfunction 46 has eigenvalue 1.186824881





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

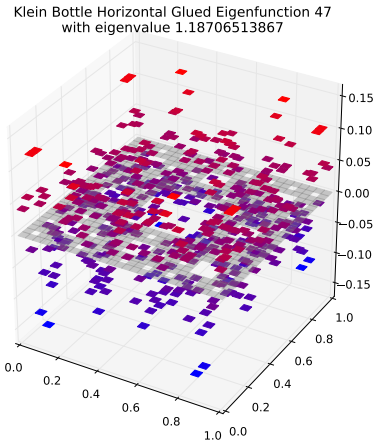


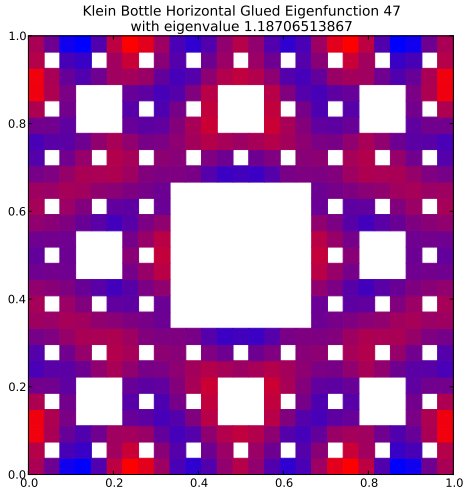


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.197798729969$
Dot Value: 0.1297109917508924

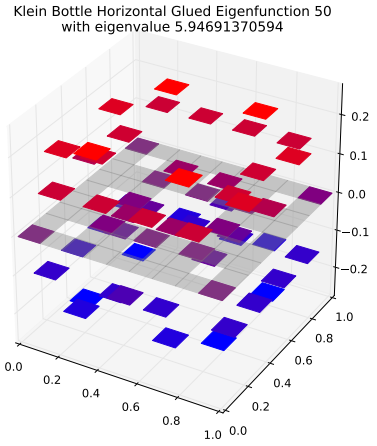
48 $M = 3$ Eigenfunction 47

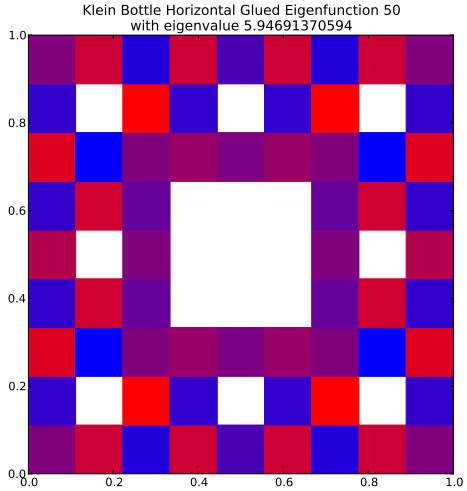
$M = 3$ Eigenfunction 47 has eigenvalue 1.18706513867





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

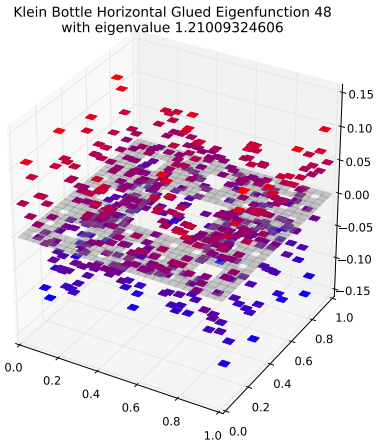


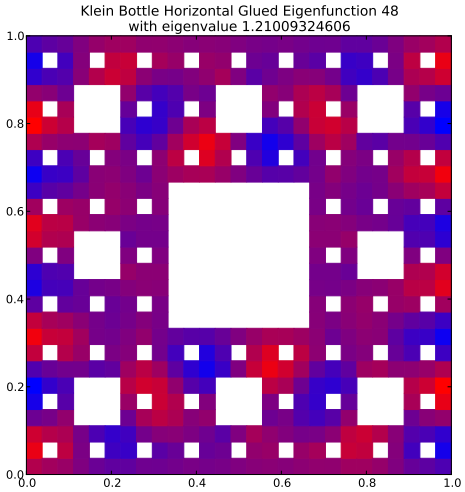


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.199610284825$
Dot Value: 0.13102095348176845

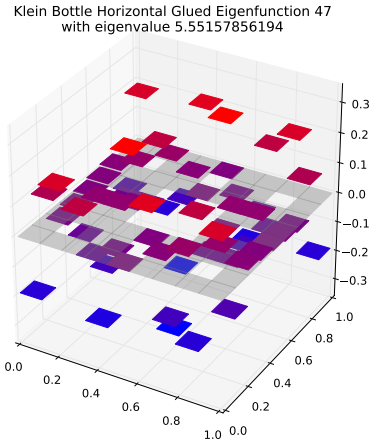
49 $M = 3$ Eigenfunction 48

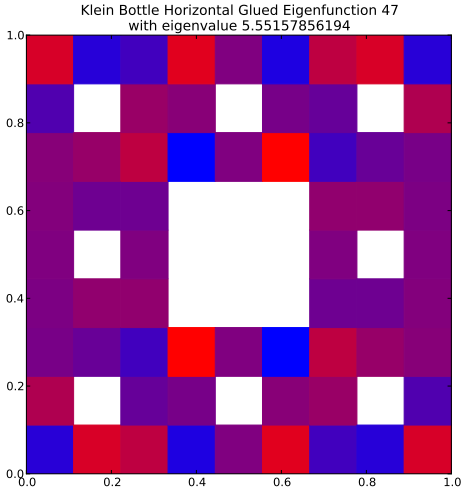
$M = 3$ Eigenfunction 48 has eigenvalue 1.21009324606





Compare to $m = 2$ eigenspace with eigenvalue 5.55157856194

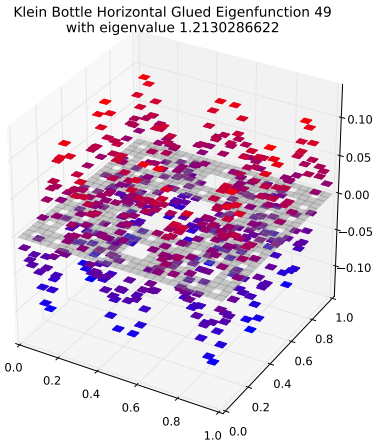


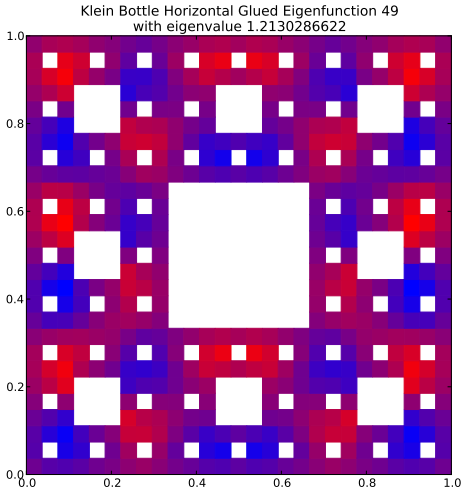


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.217972822065$
Dot Value: 0.2703801922201232

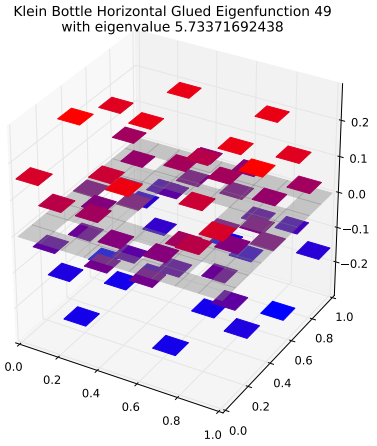
50 $M = 3$ Eigenfunction 49

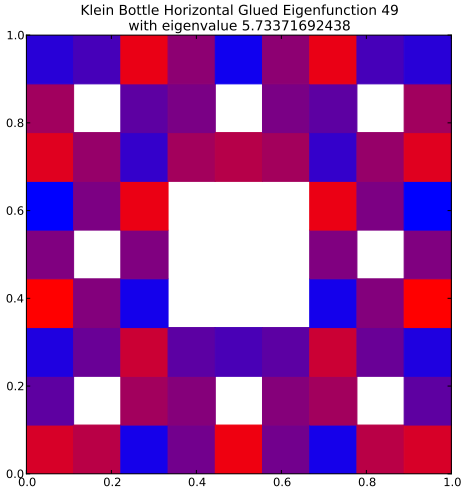
$M = 3$ Eigenfunction 49 has eigenvalue 1.2130286622





Compare to $m = 2$ eigenspace with eigenvalue 5.73371692438

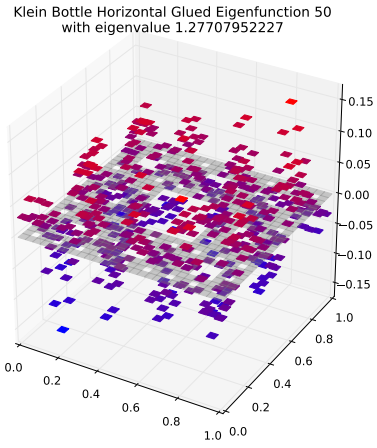


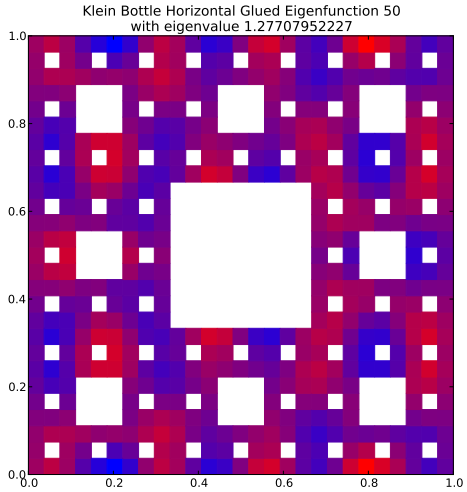


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.211560612112$
Dot Value: 0.10435968304780596

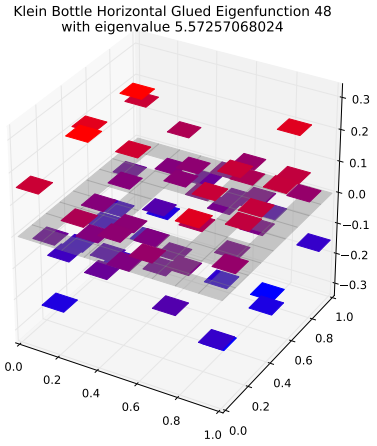
51 $M = 3$ Eigenfunction 50

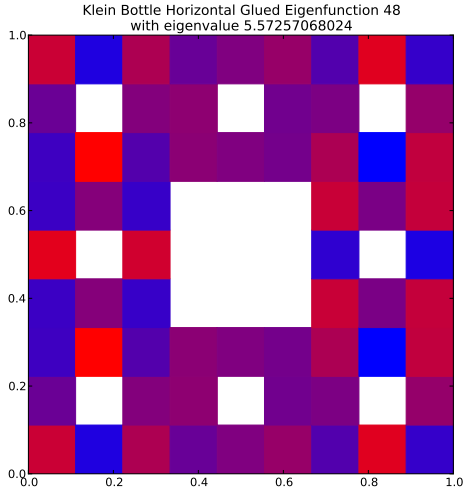
$M = 3$ Eigenfunction 50 has eigenvalue 1.27707952227





Compare to $m = 2$ eigenspace with eigenvalue 5.57257068024

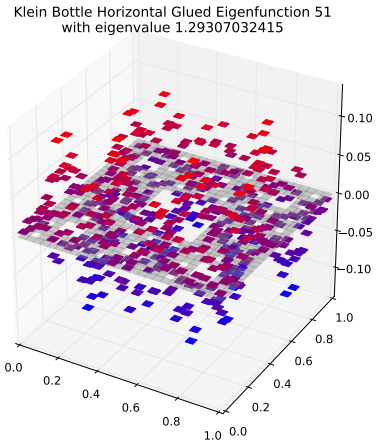


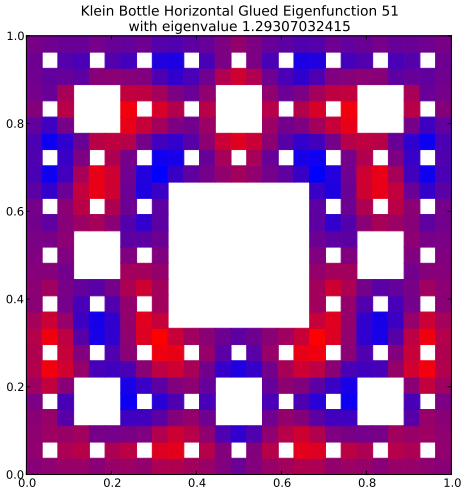


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.229172422487$
Dot Value: 0.05412759182955551

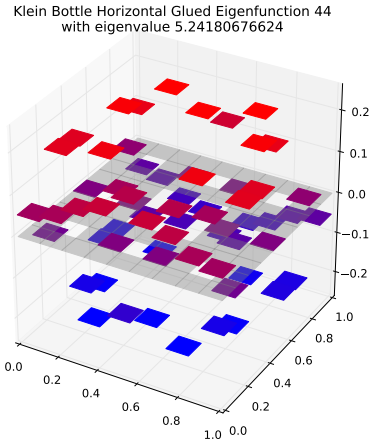
52 $M = 3$ Eigenfunction 51

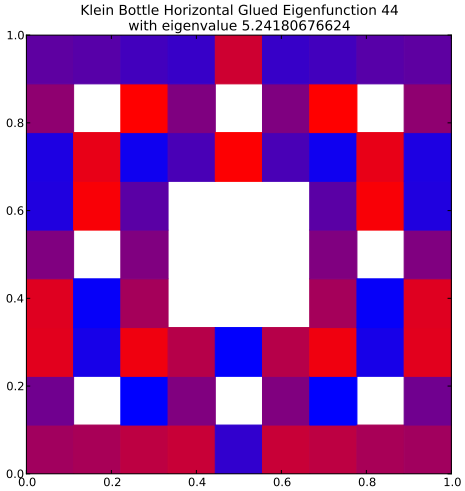
$M = 3$ Eigenfunction 51 has eigenvalue 1.29307032415





Compare to $m = 2$ eigenspace with eigenvalue 5.24180676624

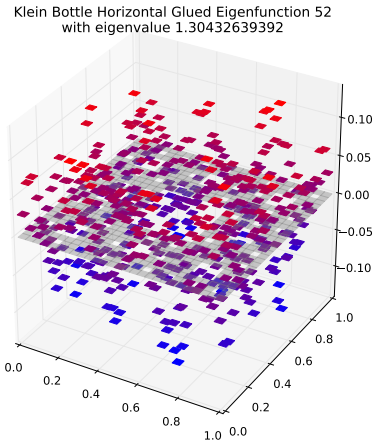


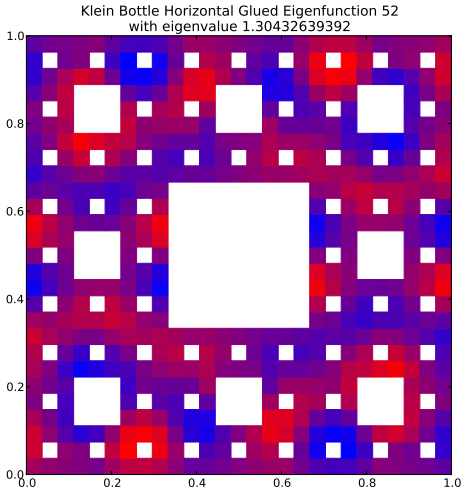


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.246684088486$
Dot Value: 0.06431850210077272

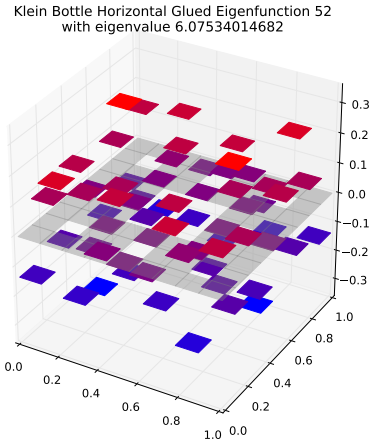
53 $M = 3$ Eigenfunction 52

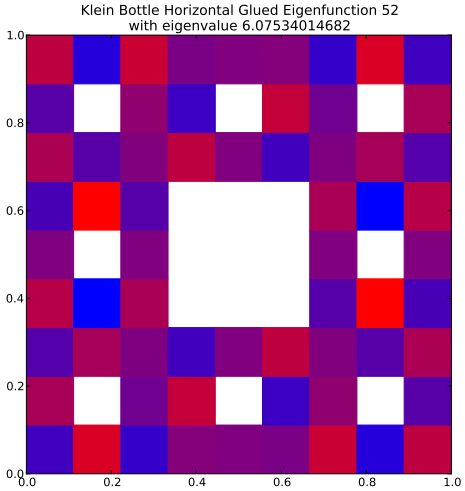
$M = 3$ Eigenfunction 52 has eigenvalue 1.30432639392





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

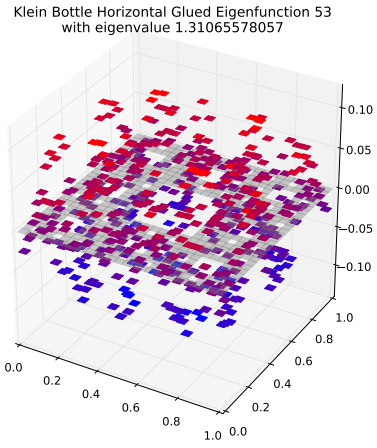


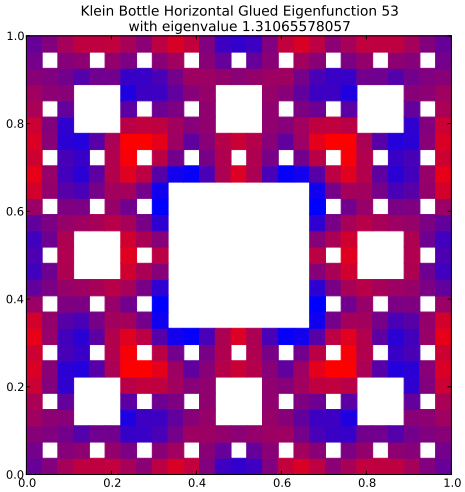


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.214691912288$
Dot Value: 0.22552843633891662

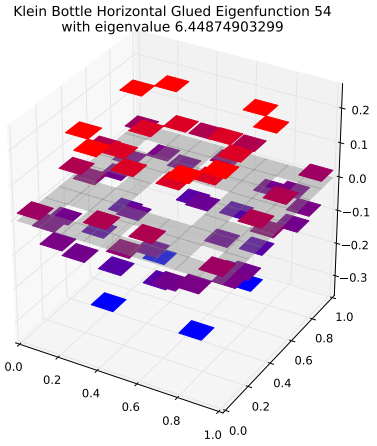
54 $M = 3$ Eigenfunction 53

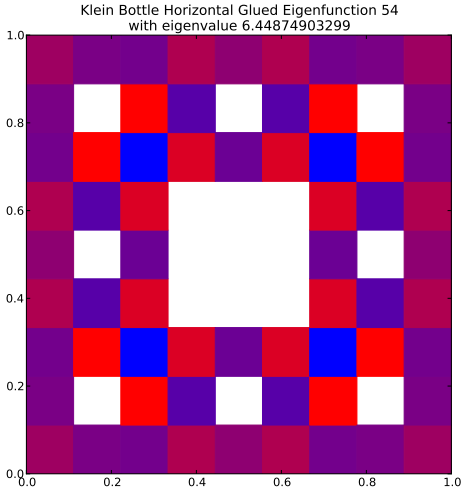
$M = 3$ Eigenfunction 53 has eigenvalue 1.31065578057





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

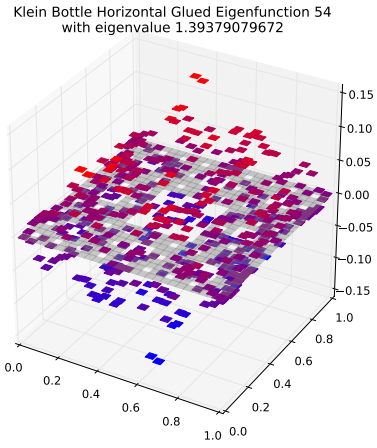


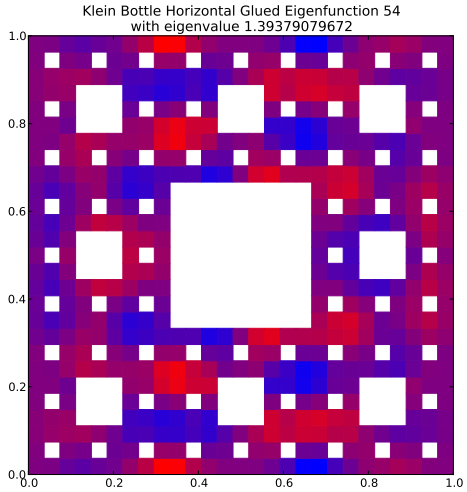


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.20324186503$
Dot Value: 0.24335434177897874

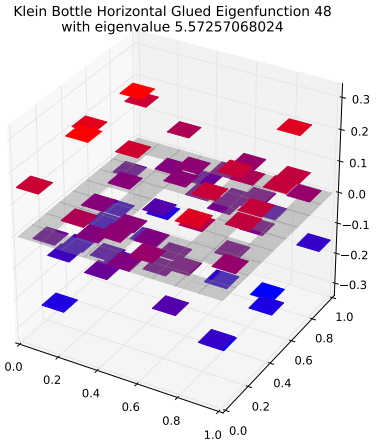
55 $M = 3$ Eigenfunction 54

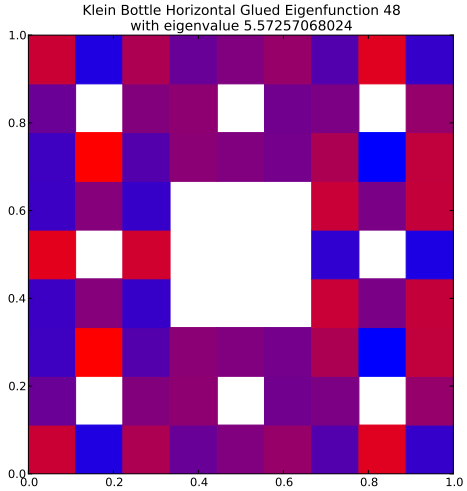
$M = 3$ Eigenfunction 54 has eigenvalue 1.39379079672





Compare to $m = 2$ eigenspace with eigenvalue 5.57257068024

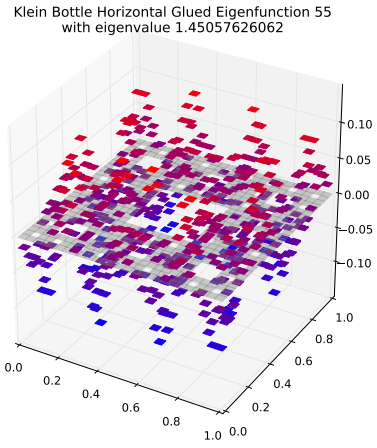


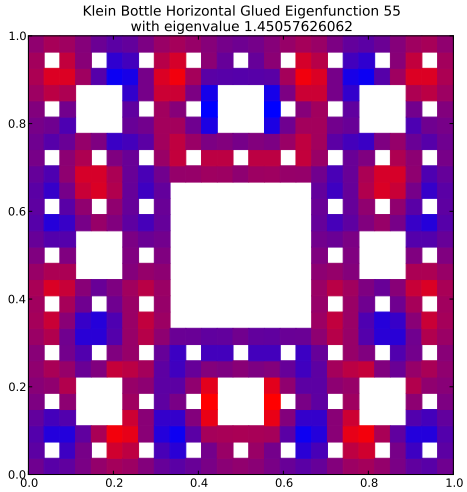


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.250116306583$
Dot Value: 0.36401385947399667

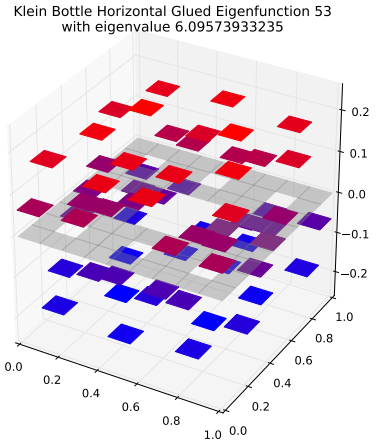
56 $M = 3$ Eigenfunction 55

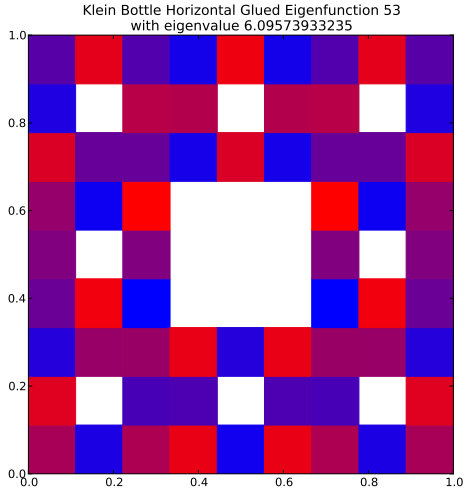
$M = 3$ Eigenfunction 55 has eigenvalue 1.45057626062





Compare to $m = 2$ eigenspace with eigenvalue 6.09573933235

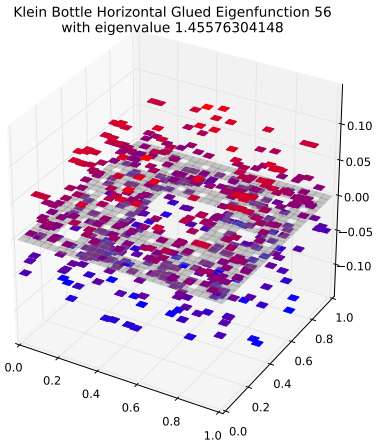


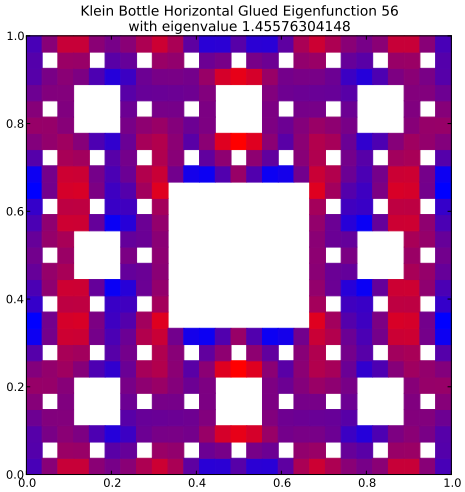


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.237965598844$
Dot Value: 0.3020706740344563

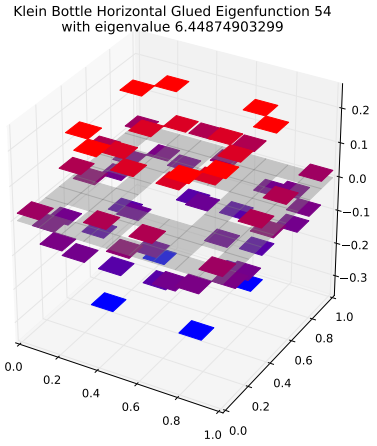
57 $M = 3$ Eigenfunction 56

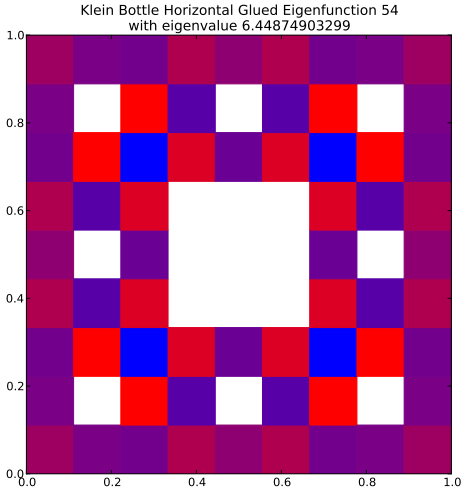
$M = 3$ Eigenfunction 56 has eigenvalue 1.45576304148





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

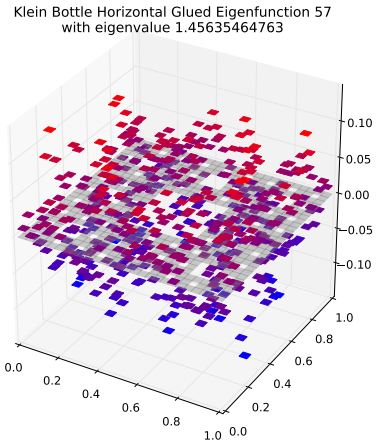


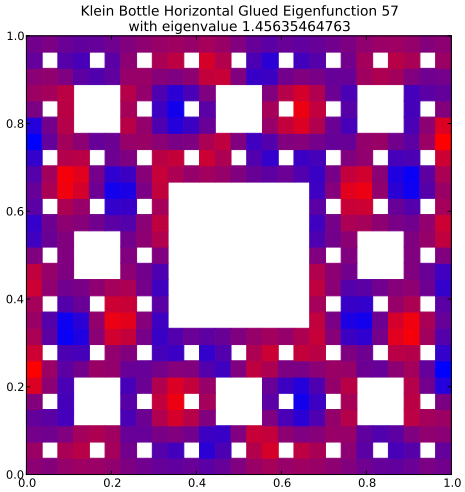


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.225743478934$
Dot Value: 0.3699258451199551

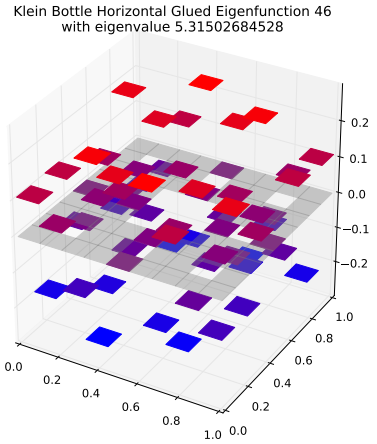
58 $M = 3$ Eigenfunction 57

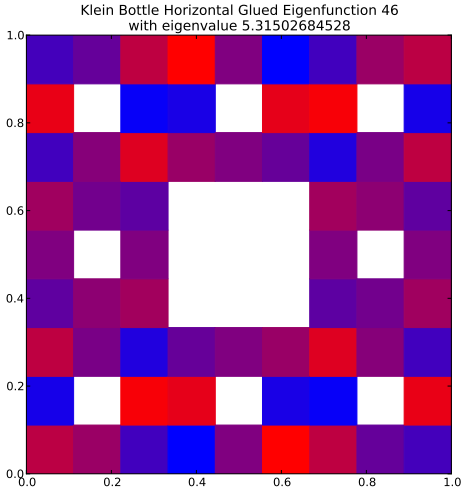
$M = 3$ Eigenfunction 57 has eigenvalue 1.45635464763





Compare to $m = 2$ eigenspace with eigenvalue 5.31502684528

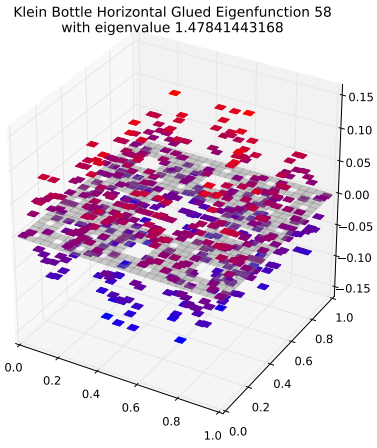


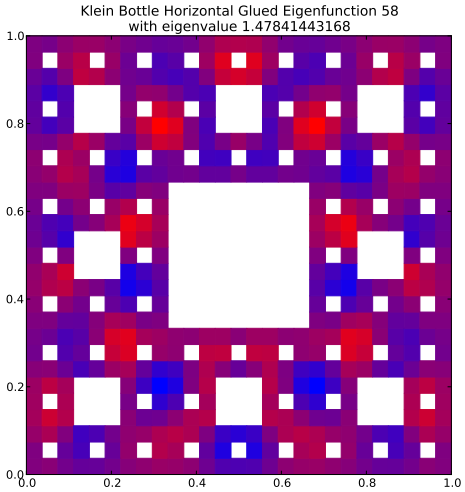


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.274007016338$
Dot Value: 0.29288977156531604

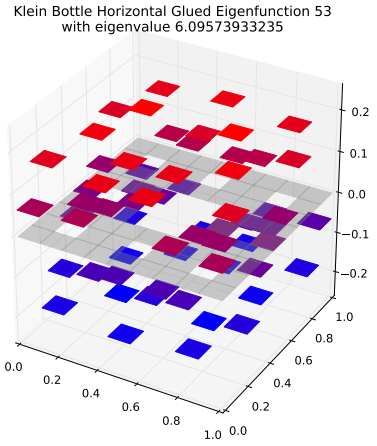
59 $M = 3$ Eigenfunction 58

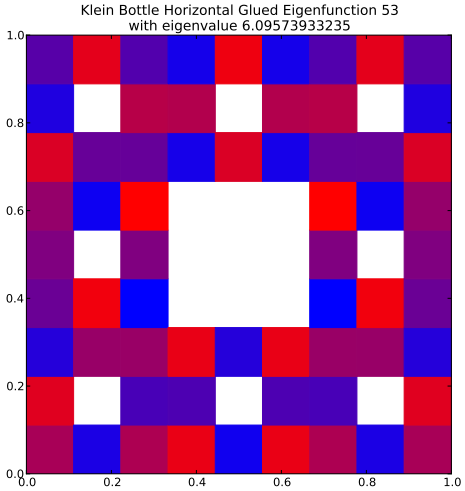
$M = 3$ Eigenfunction 58 has eigenvalue 1.47841443168





Compare to $m = 2$ eigenspace with eigenvalue 6.09573933235

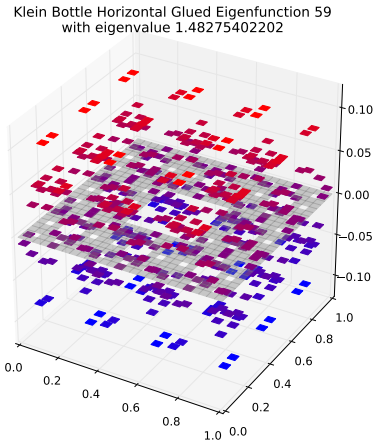


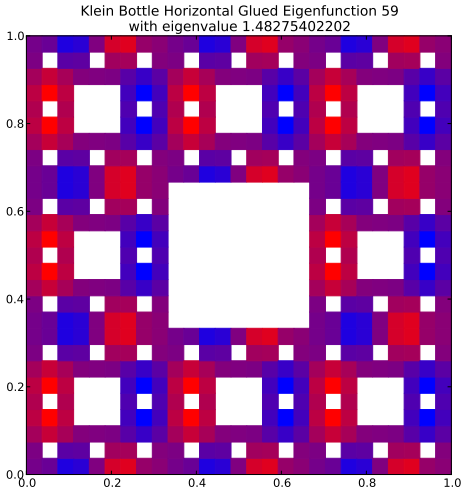


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.242532423235$
Dot Value: 0.3180573866513199

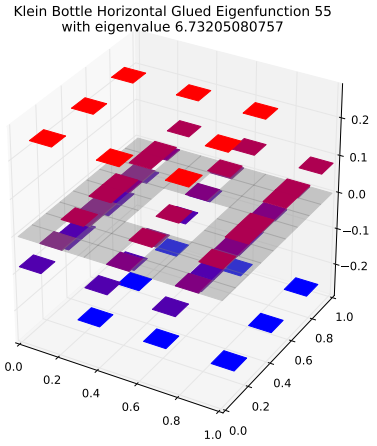
60 $M = 3$ Eigenfunction 59

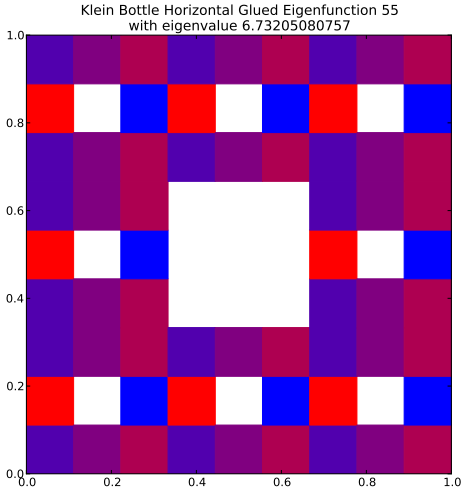
$M = 3$ Eigenfunction 59 has eigenvalue 1.48275402202





Compare to $m = 2$ eigenspace with eigenvalue 6.73205080757

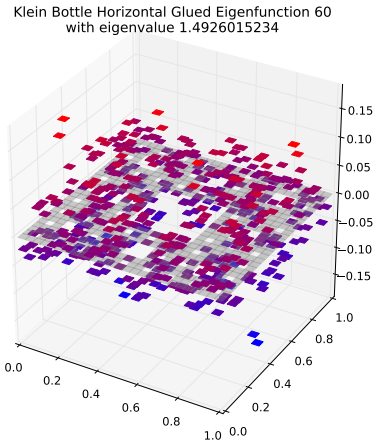


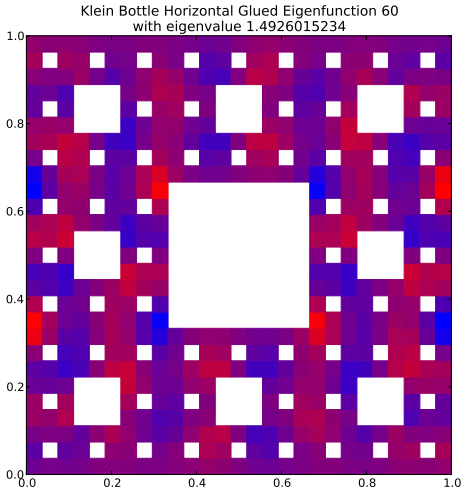


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.220252945856$
Dot Value: 0.08916117818499214

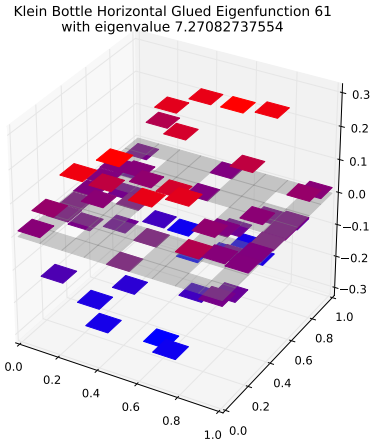
61 $M = 3$ Eigenfunction 60

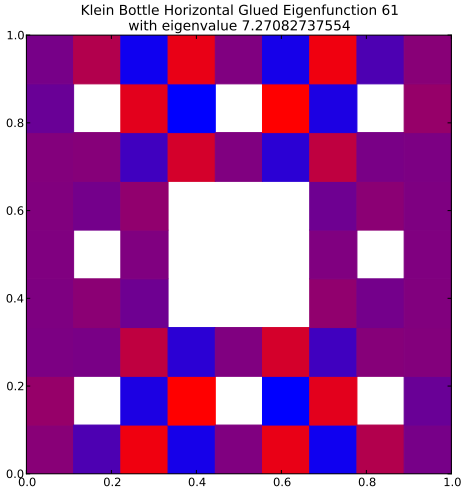
$M = 3$ Eigenfunction 60 has eigenvalue 1.4926015234





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

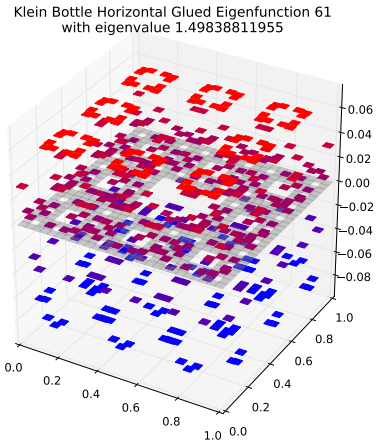


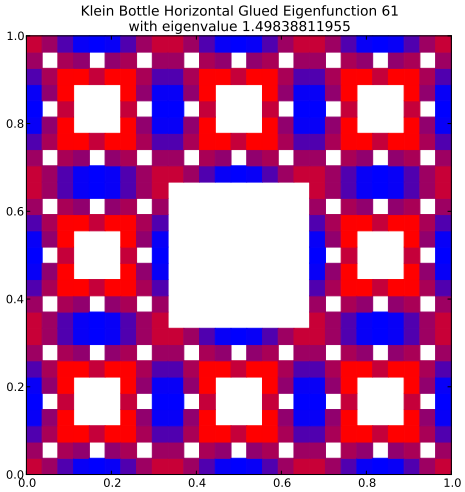


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.205286337621$
Dot Value: 0.48233411110929336

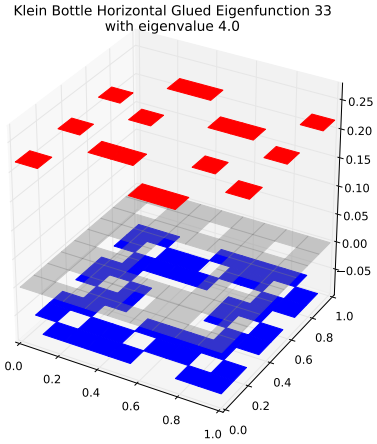
62 $M = 3$ Eigenfunction 61

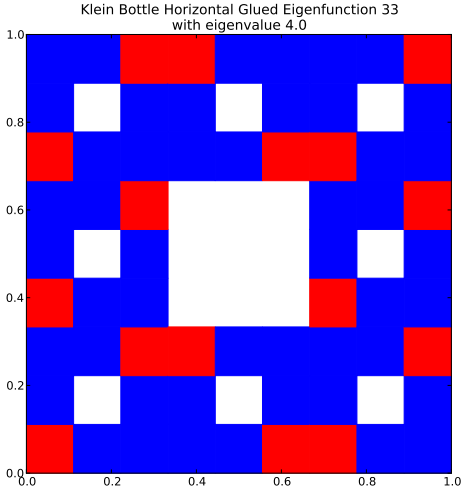
$M = 3$ Eigenfunction 61 has eigenvalue 1.49838811955





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

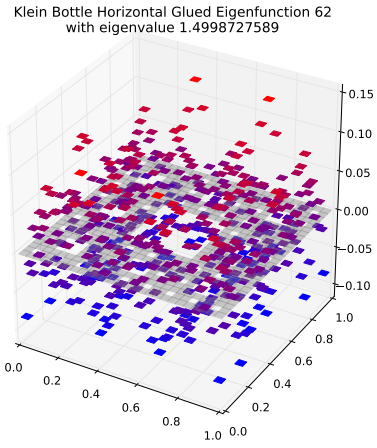


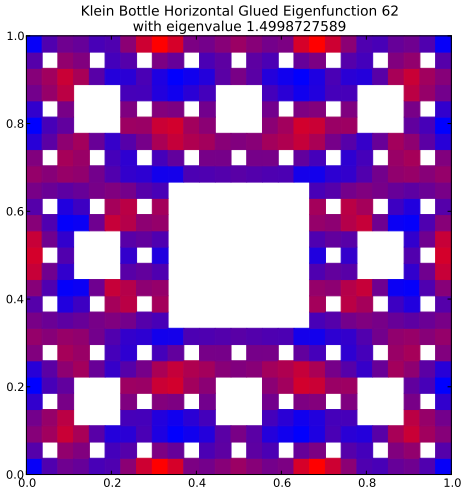


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.374597029888$
Dot Value: 2.220446049250313e-16

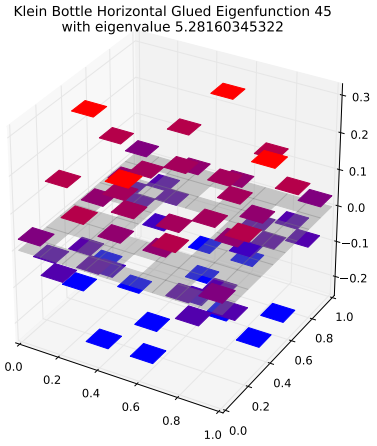
63 $M = 3$ Eigenfunction 62

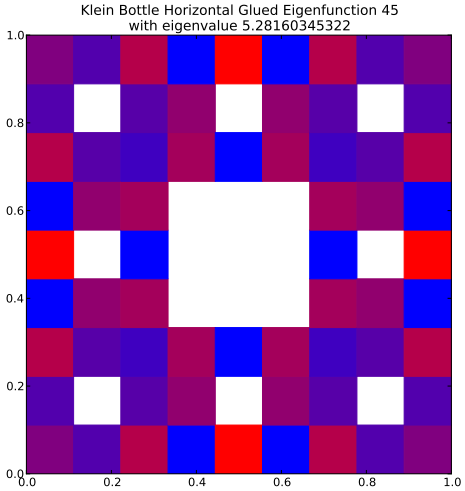
$M = 3$ Eigenfunction 62 has eigenvalue 1.4998727589





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

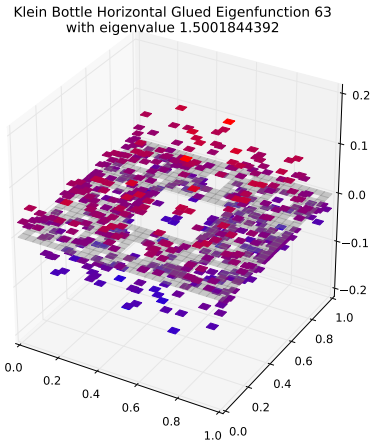


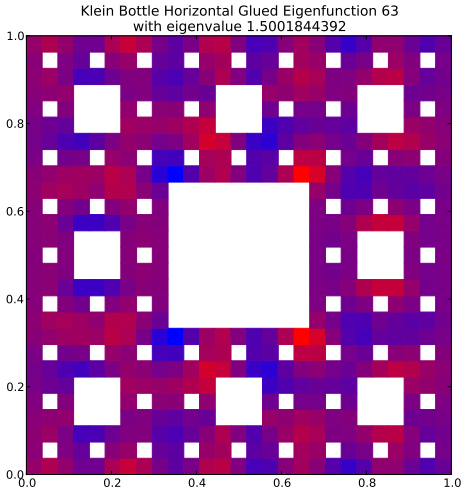


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.283980569952$
Dot Value: 0.2369032207635885

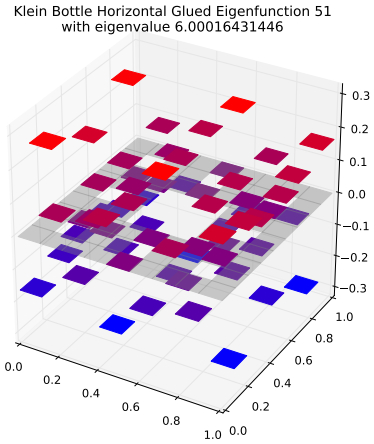
64 $M = 3$ Eigenfunction 63

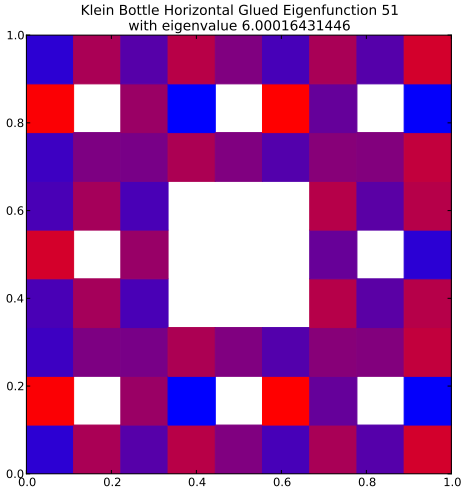
$M = 3$ Eigenfunction 63 has eigenvalue 1.5001844392





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

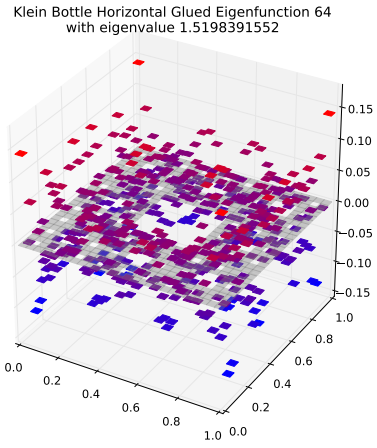


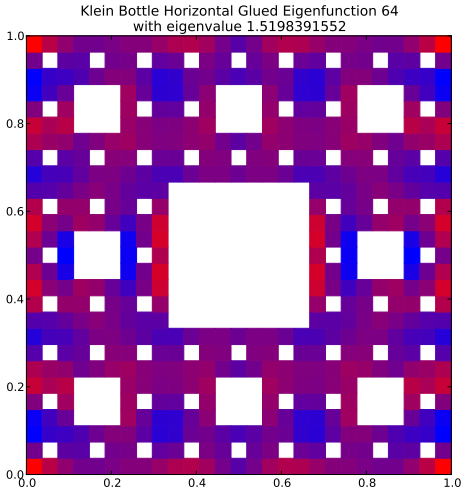


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.250023892776$
Dot Value: 0.44297902501702946

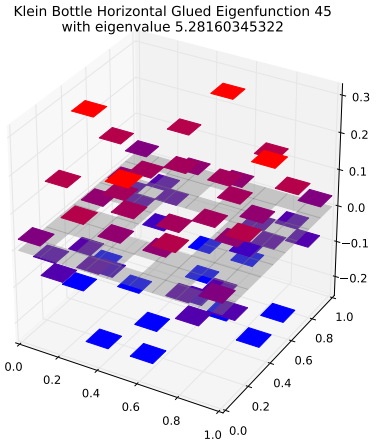
65 $M = 3$ Eigenfunction 64

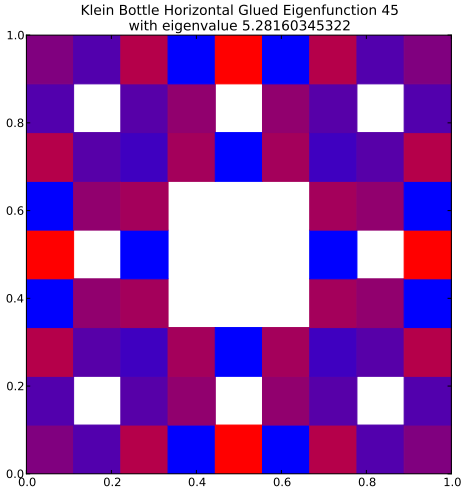
$M = 3$ Eigenfunction 64 has eigenvalue 1.5198391552





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

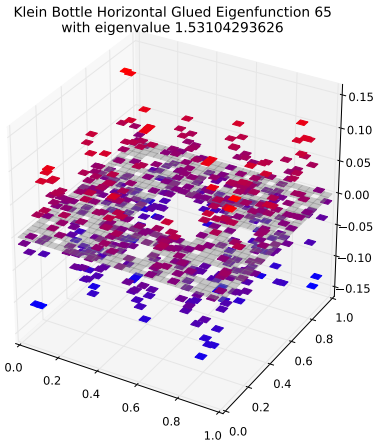


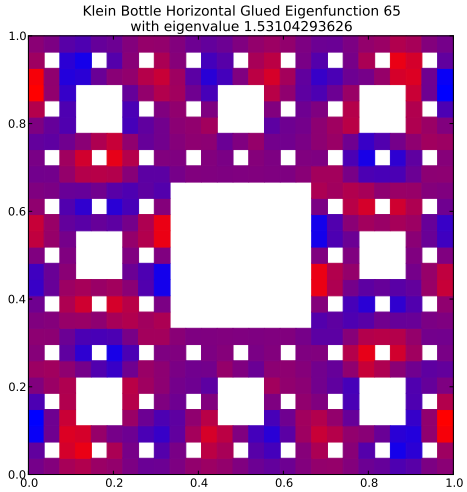


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.287760936364$
Dot Value: 0.41711841336066924

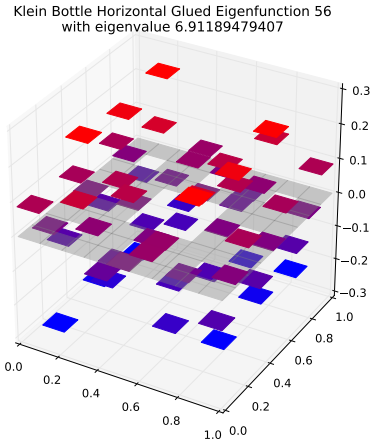
66 $M = 3$ Eigenfunction 65

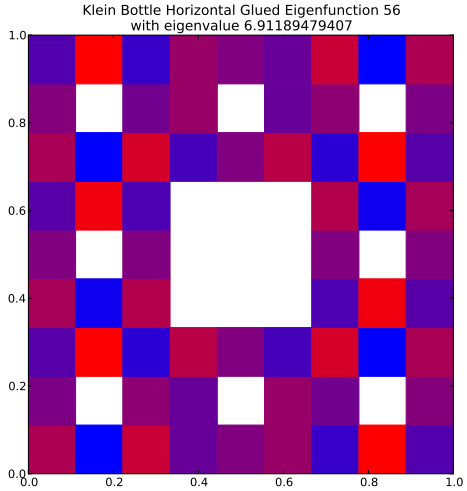
$M = 3$ Eigenfunction 65 has eigenvalue 1.53104293626





Compare to $m = 2$ eigenspace with eigenvalue 6.91189479407

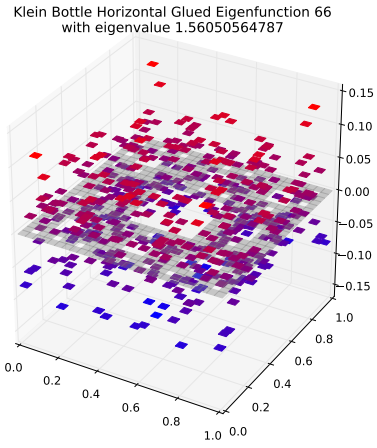


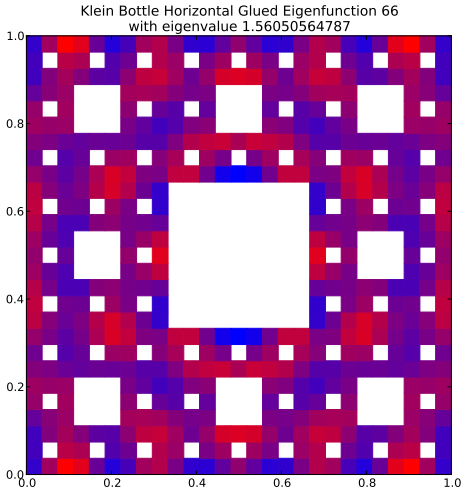


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.221508425963$
Dot Value: 0.17795721330945014

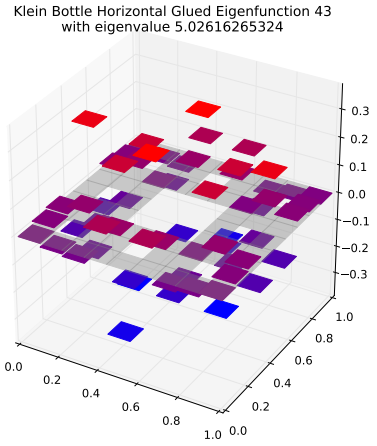
67 $M = 3$ Eigenfunction 66

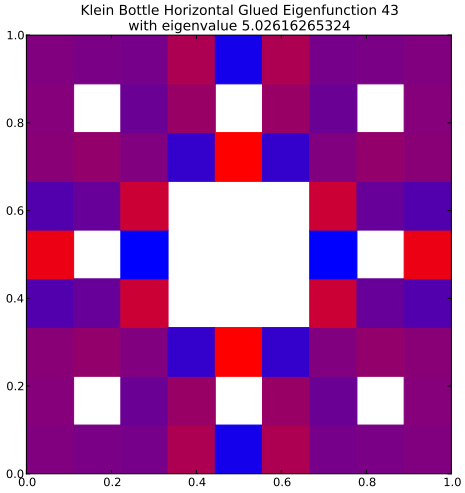
$M = 3$ Eigenfunction 66 has eigenvalue 1.560505647870





Compare to $m = 2$ eigenspace with eigenvalue 5.026162653240

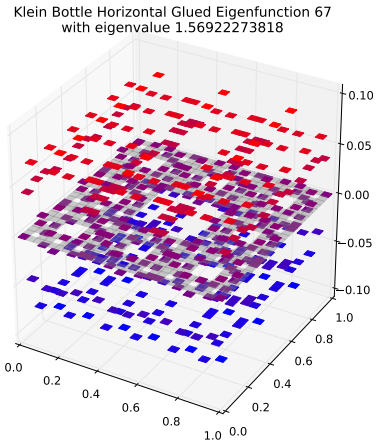


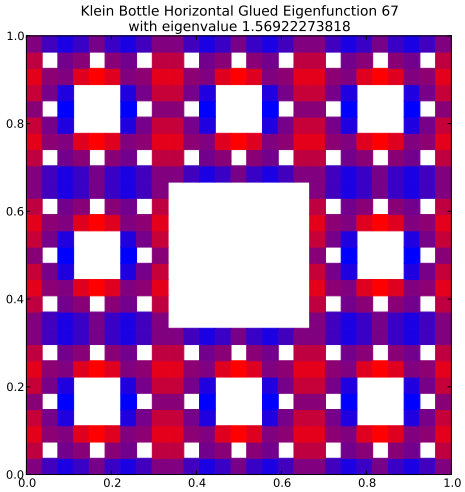


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.310476551503$
Dot Value: 0.1921782256821204

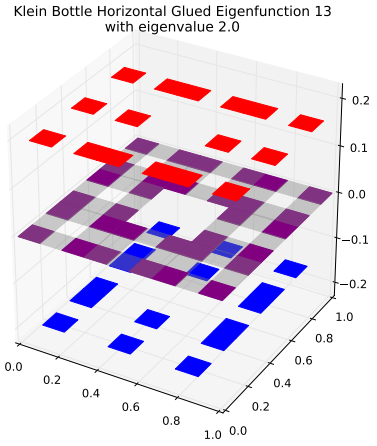
68 $M = 3$ Eigenfunction 67

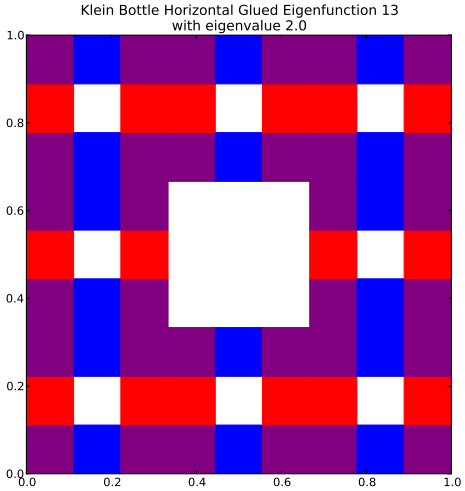
$M = 3$ Eigenfunction 67 has eigenvalue 1.56922273818





Compare to $m = 2$ eigenspace with eigenvalue 2.0

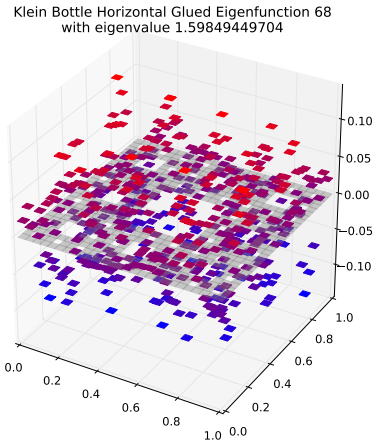


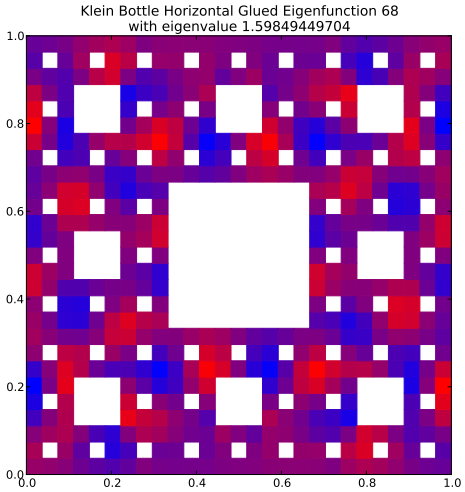


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.78461136909$
Dot Value: 0.0

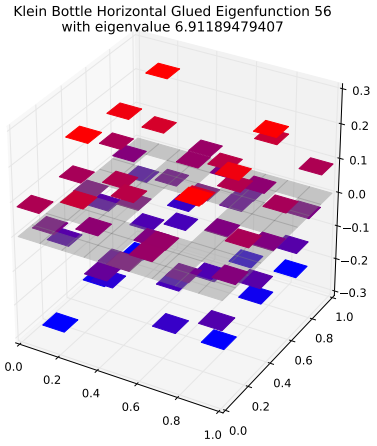
69 $M = 3$ Eigenfunction 68

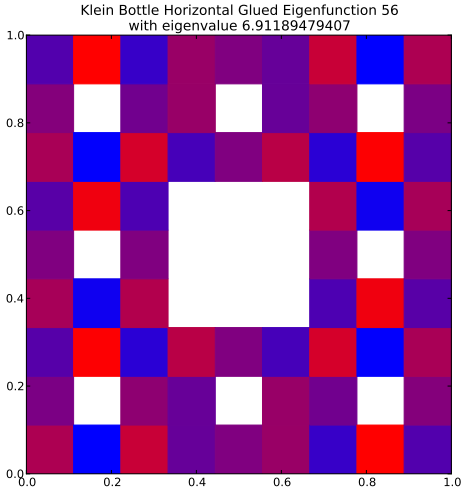
$M = 3$ Eigenfunction 68 has eigenvalue 1.59849449704





Compare to $m = 2$ eigenspace with eigenvalue 6.91189479407

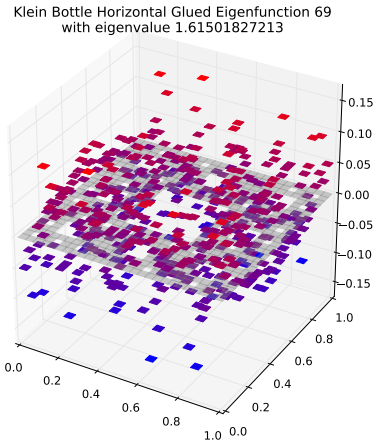


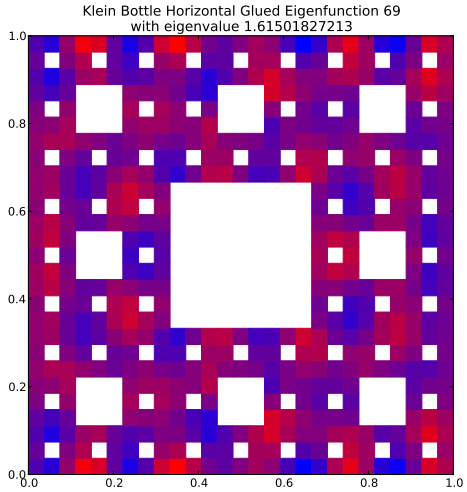


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.23126719151$
Dot Value: 0.27133128611520296

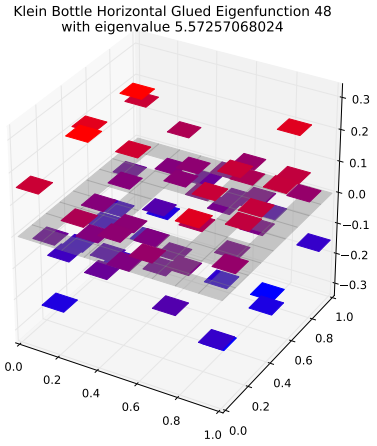
70 $M = 3$ Eigenfunction 69

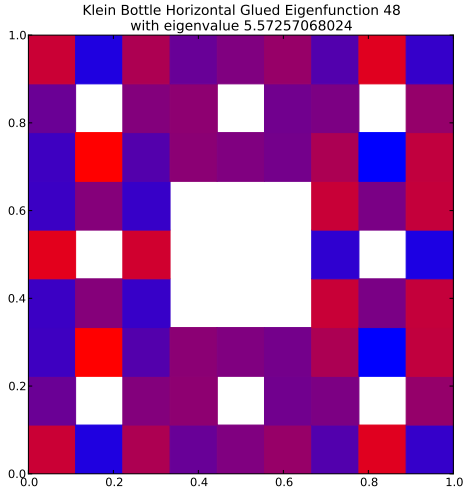
$M = 3$ Eigenfunction 69 has eigenvalue 1.61501827213





Compare to $m = 2$ eigenspace with eigenvalue 5.57257068024

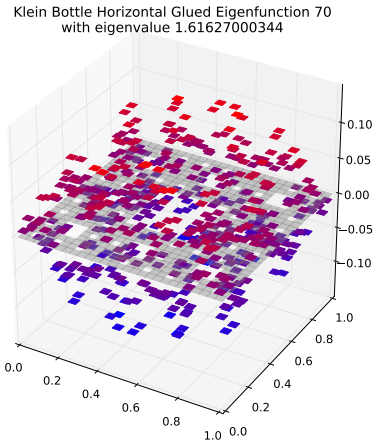


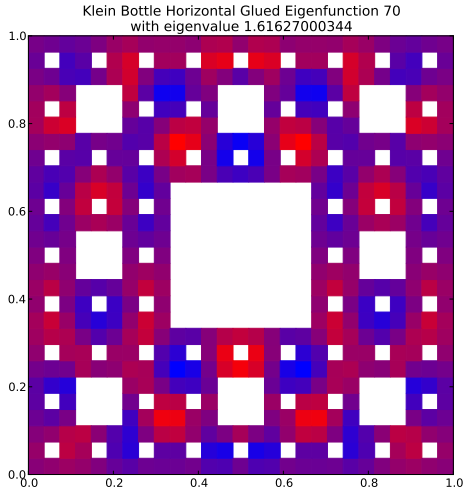


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.289815664044$
Dot Value: 0.3099140151454426

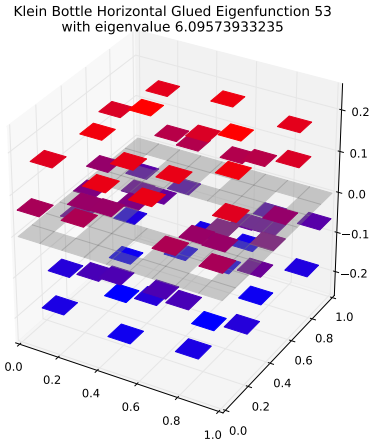
71 $M = 3$ Eigenfunction 70

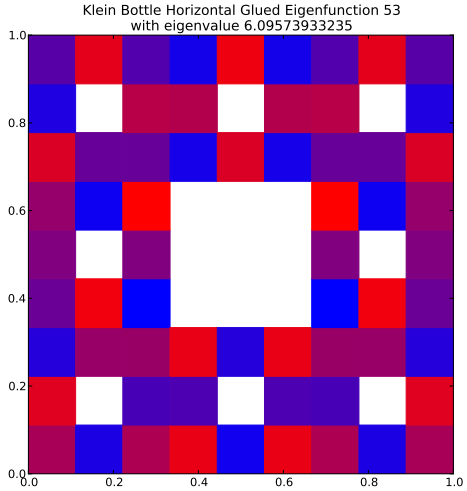
$M = 3$ Eigenfunction 70 has eigenvalue 1.61627000344





Compare to $m = 2$ eigenspace with eigenvalue 6.09573933235

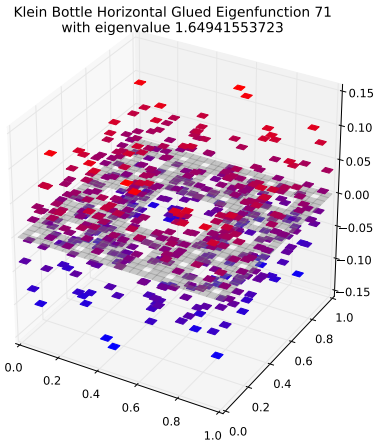


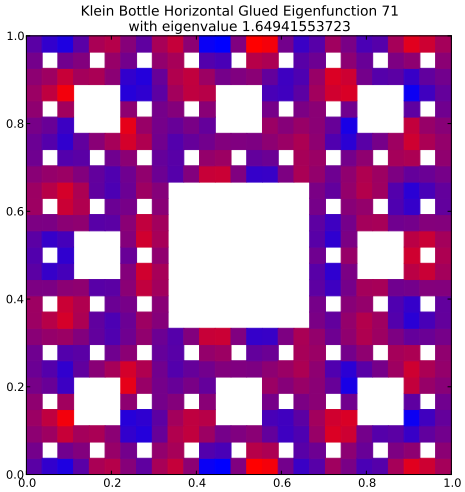


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.265147493243$
Dot Value: 0.33104198111943617

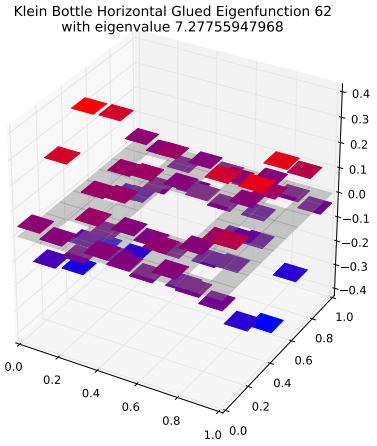
72 $M = 3$ Eigenfunction 71

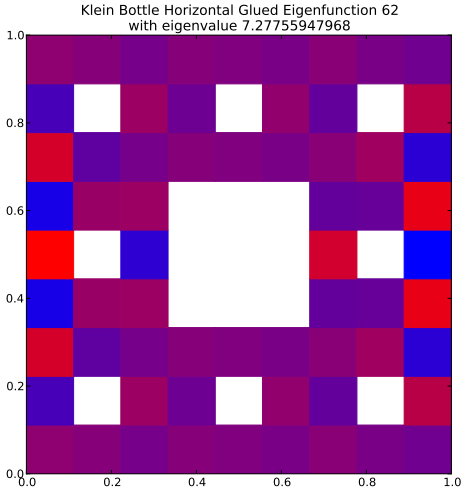
$M = 3$ Eigenfunction 71 has eigenvalue 1.64941553723





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

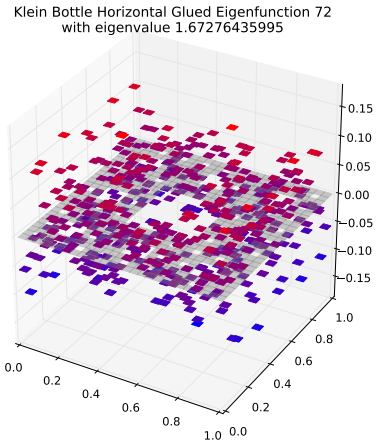


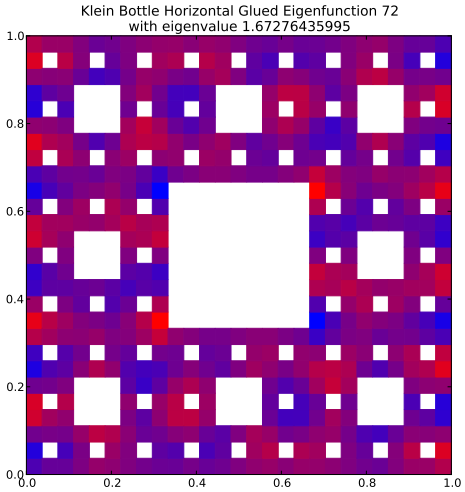


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.226644047615$
Dot Value: 0.28260724888583166

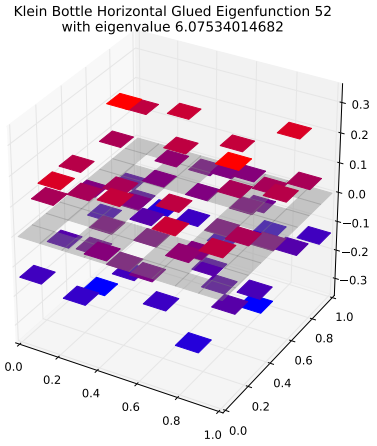
73 $M = 3$ Eigenfunction 72

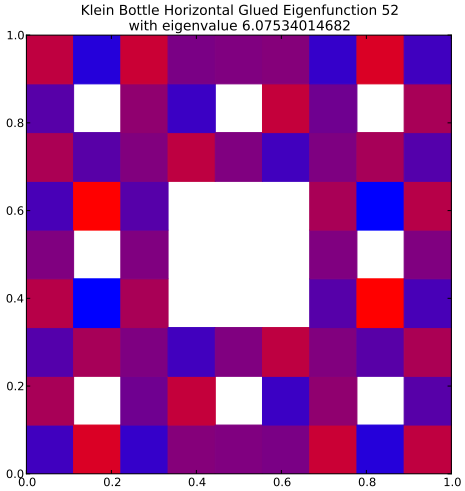
$M = 3$ Eigenfunction 72 has eigenvalue 1.67276435995





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

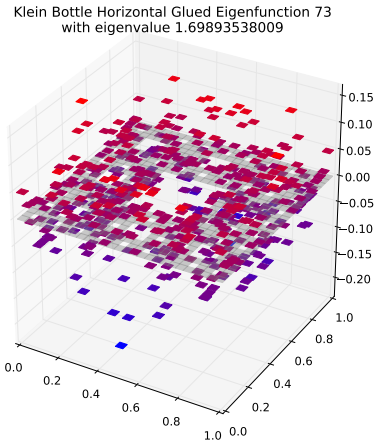


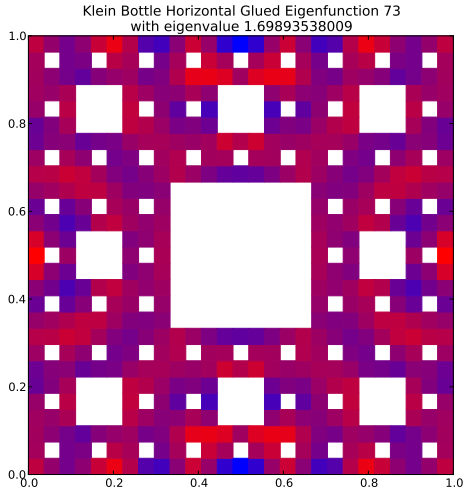


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.275336741569$
Dot Value: 0.19711271874641978

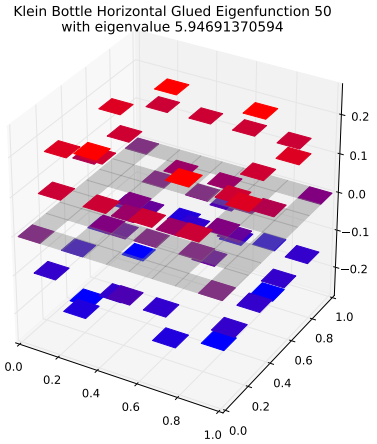
74 $M = 3$ Eigenfunction 73

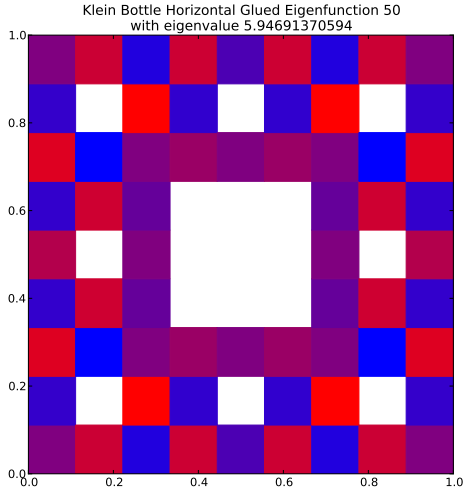
$M = 3$ Eigenfunction 73 has eigenvalue 1.69893538009





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

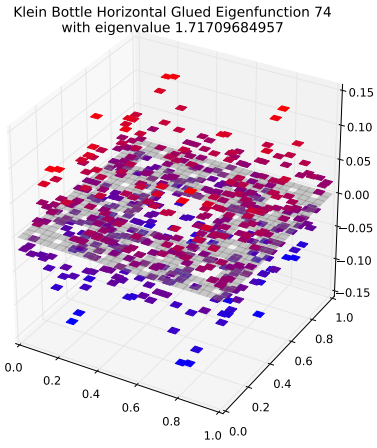


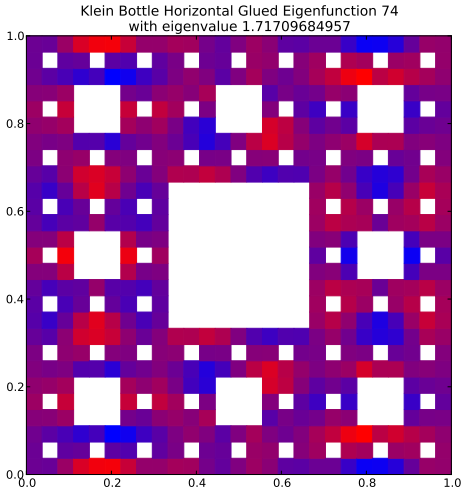


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.285683543448$
Dot Value: 0.17720432525860041

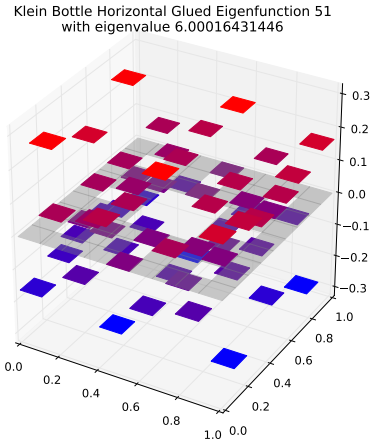
75 $M = 3$ Eigenfunction 74

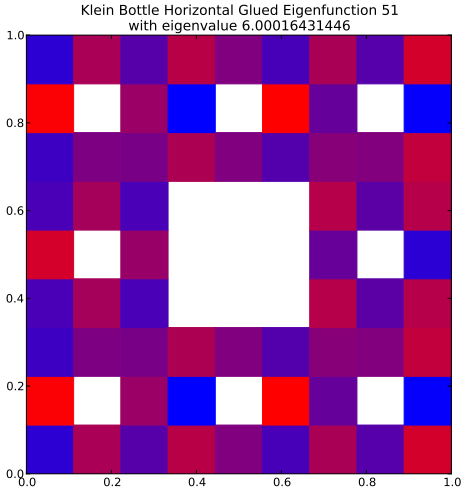
$M = 3$ Eigenfunction 74 has eigenvalue 1.71709684957





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

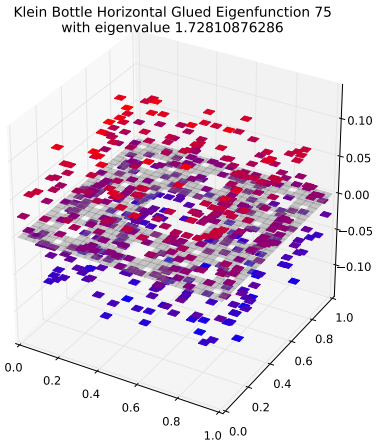


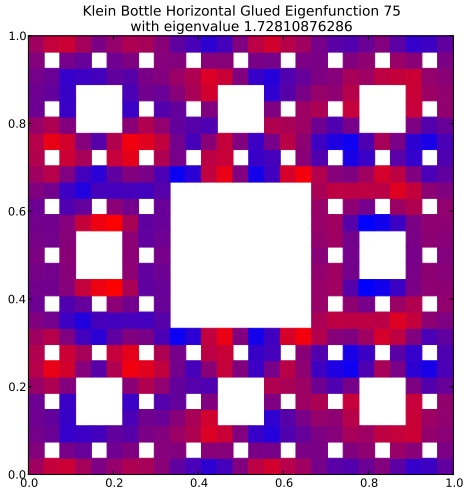


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.286174971148$
Dot Value: 0.29656722301699656

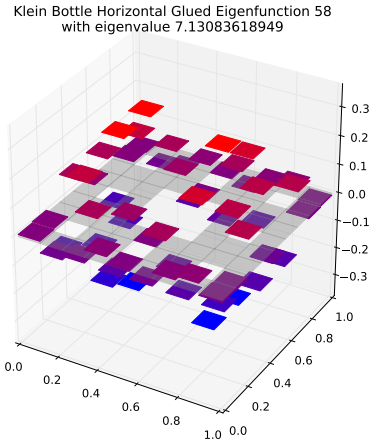
76 $M = 3$ Eigenfunction 75

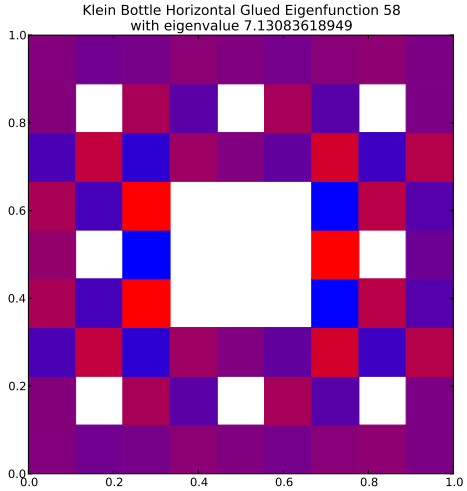
$M = 3$ Eigenfunction 75 has eigenvalue 1.72810876286





Compare to $m = 2$ eigenspace with eigenvalue 7.13083618949

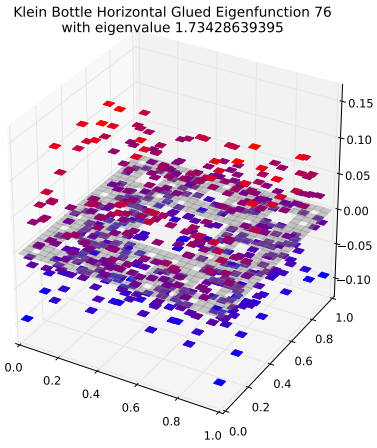


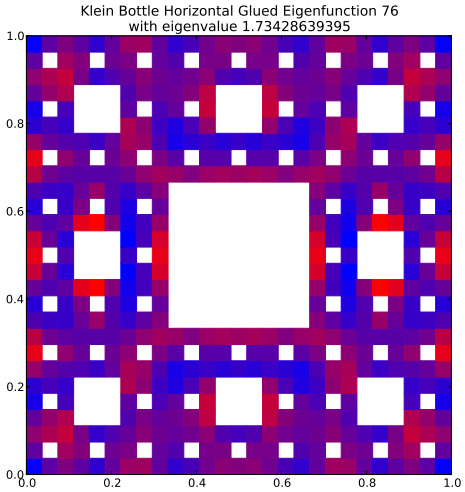


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.242343074072$
Dot Value: 0.35617904239986686

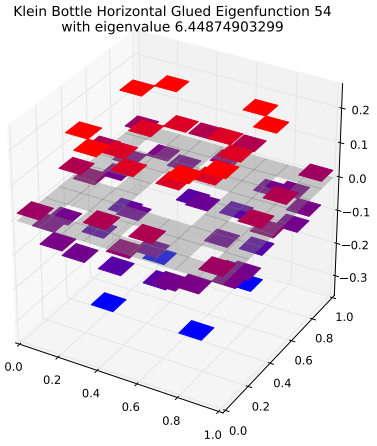
77 $M = 3$ Eigenfunction 76

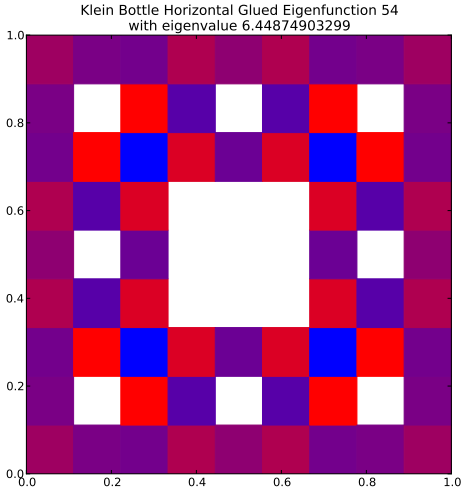
$M = 3$ Eigenfunction 76 has eigenvalue 1.73428639395





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

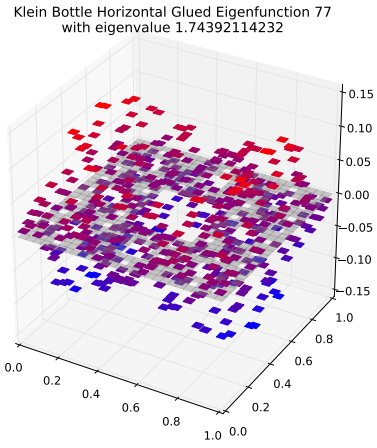


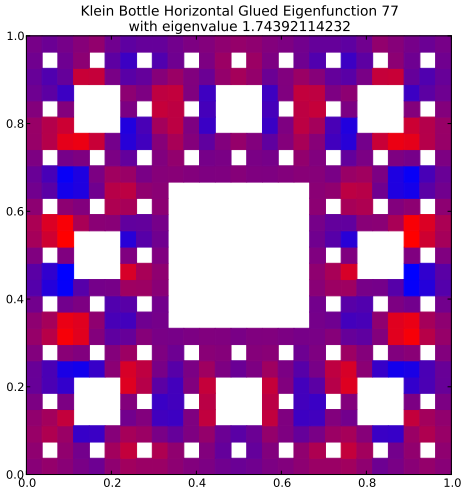


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.268933770733$
Dot Value: 0.3946114640238394

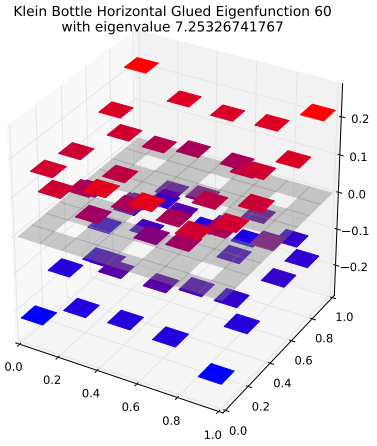
78 $M = 3$ Eigenfunction 77

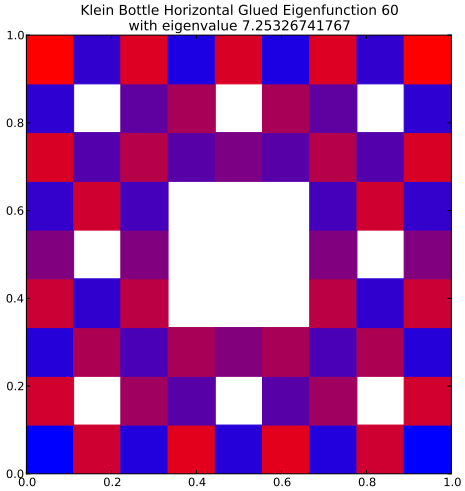
$M = 3$ Eigenfunction 77 has eigenvalue 1.74392114232





Compare to $m = 2$ eigenspace with eigenvalue 7.25326741767

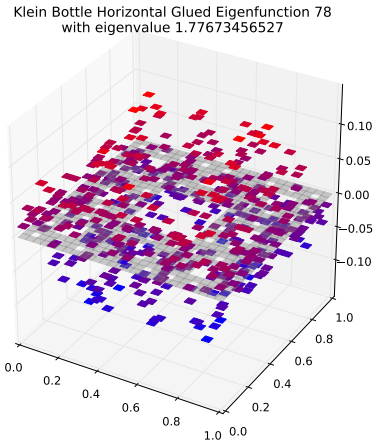


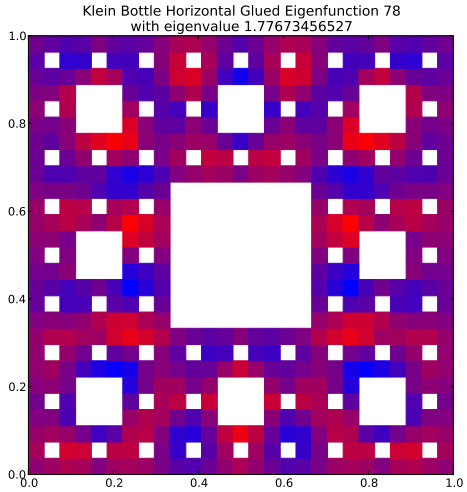


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.240432489511$
Dot Value: 0.40590363943881425

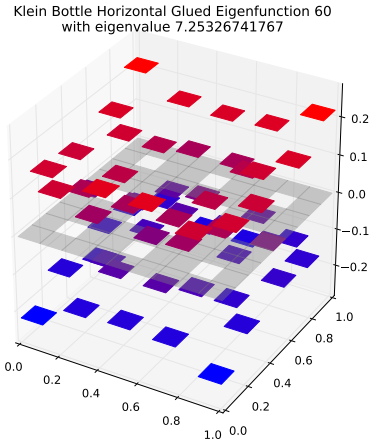
79 $M = 3$ Eigenfunction 78

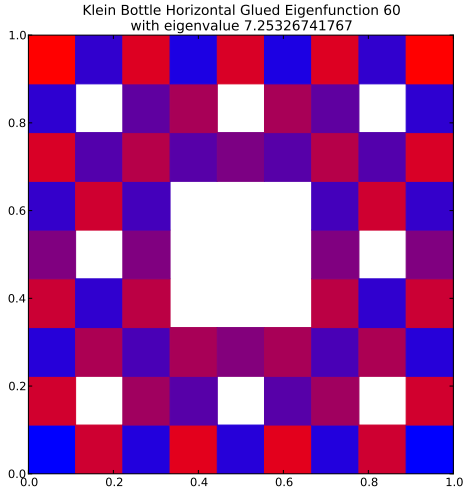
$M = 3$ Eigenfunction 78 has eigenvalue 1.77673456527





Compare to $m = 2$ eigenspace with eigenvalue 7.25326741767

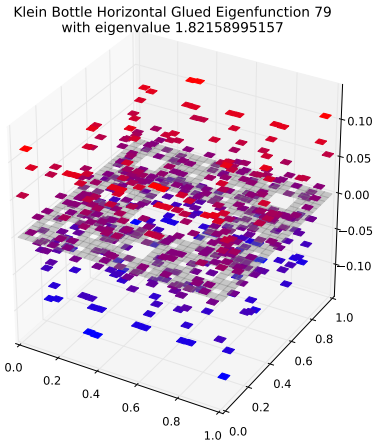


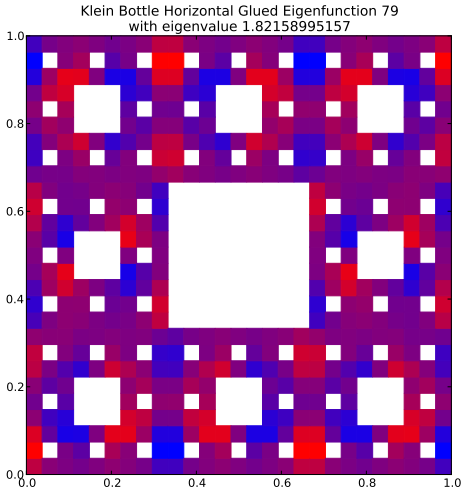


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.244956440037$
Dot Value: 0.20365202952588635

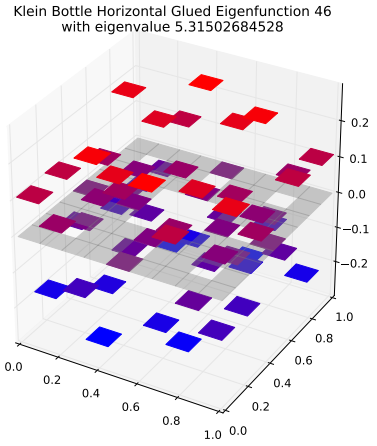
80 $M = 3$ Eigenfunction 79

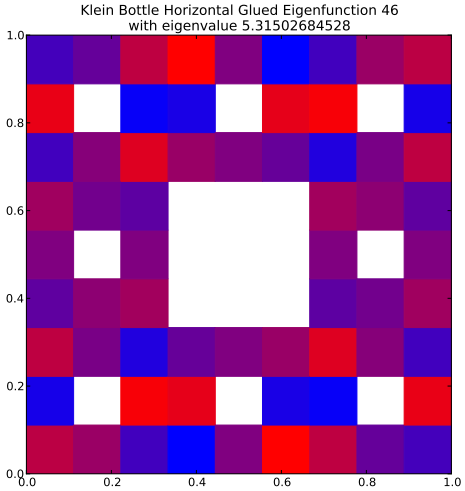
$M = 3$ Eigenfunction 79 has eigenvalue 1.82158995157





Compare to $m = 2$ eigenspace with eigenvalue 5.31502684528

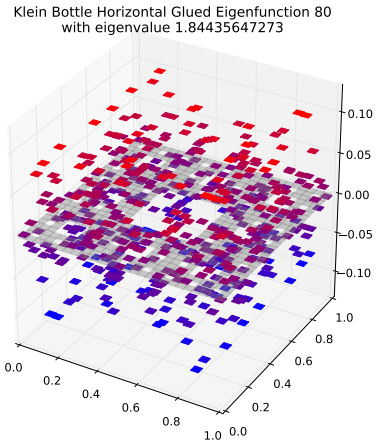


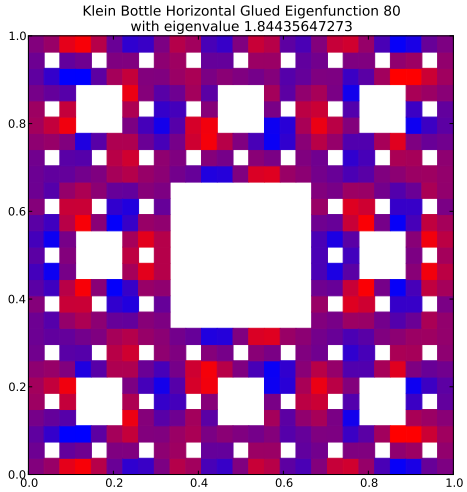


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.34272450631$
Dot Value: 0.05471357365990914

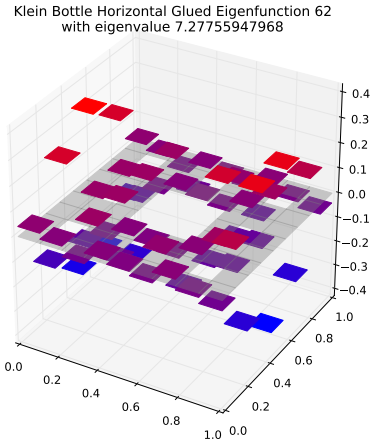
81 $M = 3$ Eigenfunction 80

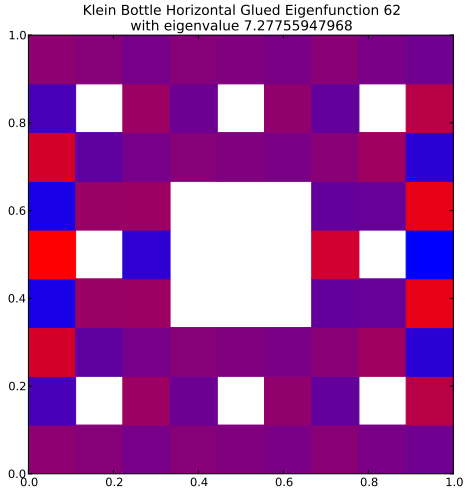
$M = 3$ Eigenfunction 80 has eigenvalue 1.84435647273





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

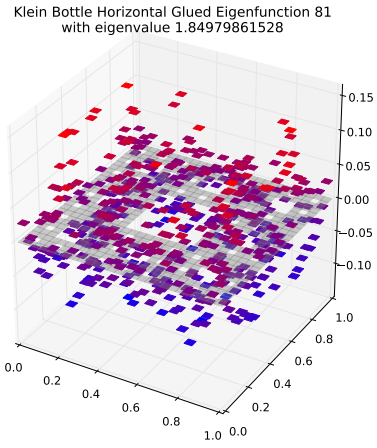


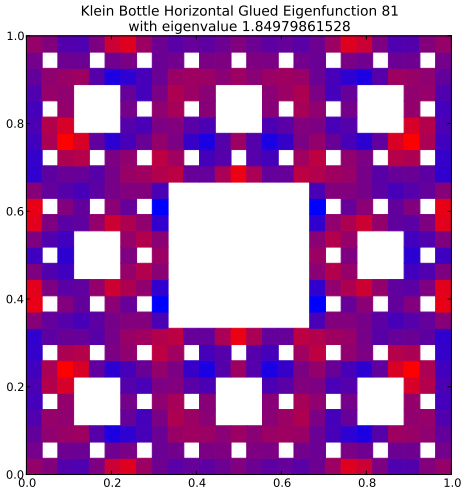


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.253430628479$
Dot Value: 0.36963905145376375

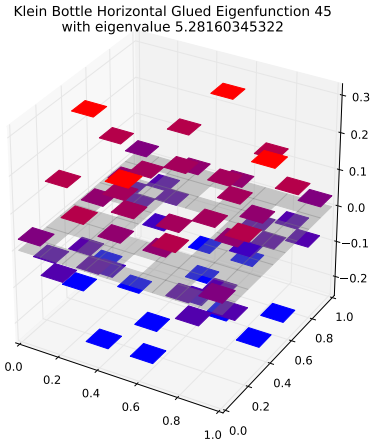
82 $M = 3$ Eigenfunction 81

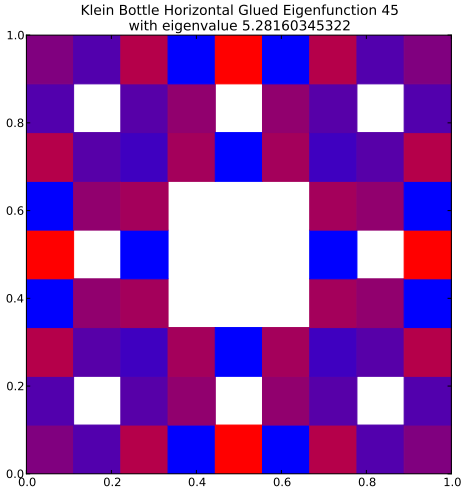
$M = 3$ Eigenfunction 81 has eigenvalue 1.84979861528





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

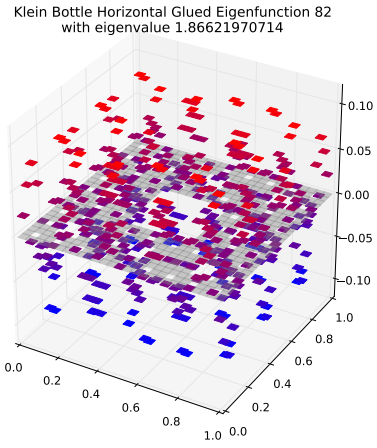


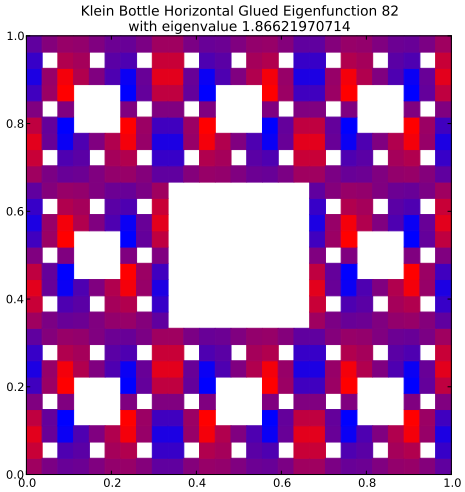


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.350234286172$
Dot Value: 0.42837500067982714

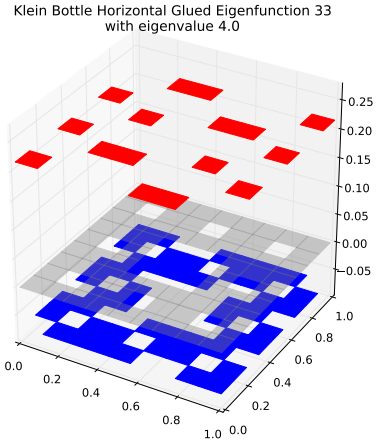
83 $M = 3$ Eigenfunction 82

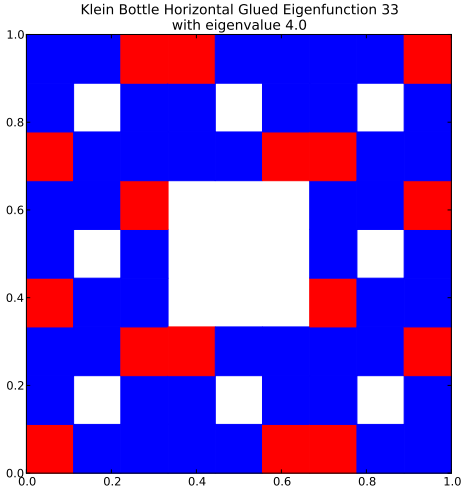
$M = 3$ Eigenfunction 82 has eigenvalue 1.86621970714





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

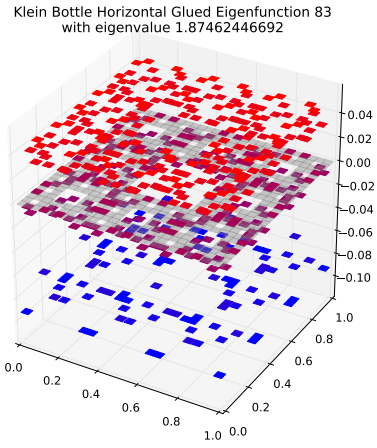


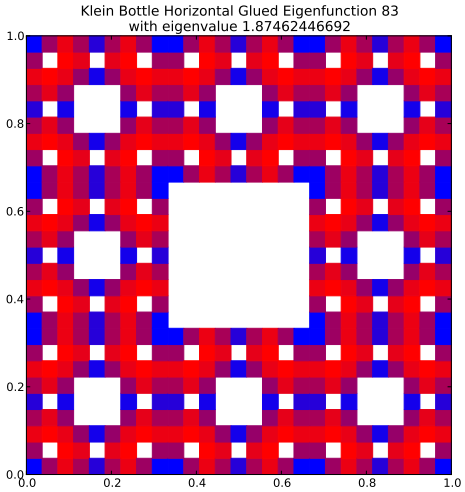


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.466554926786$
Dot Value: 0.0

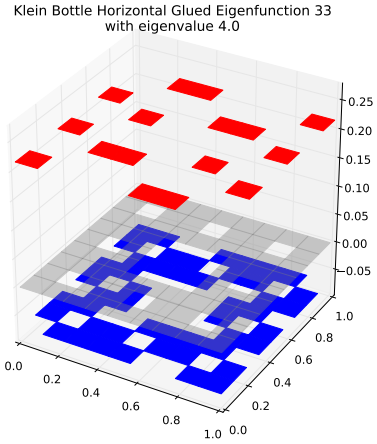
84 $M = 3$ Eigenfunction 83

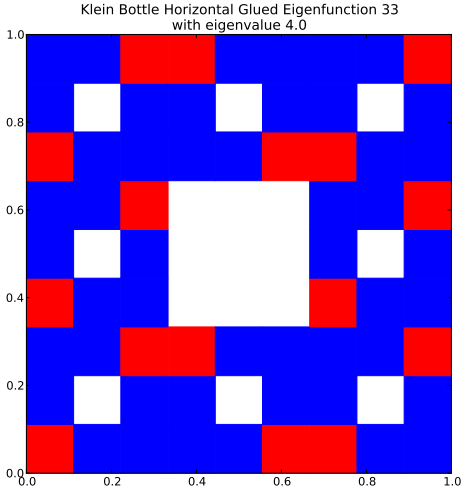
$M = 3$ Eigenfunction 83 has eigenvalue 1.87462446692





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

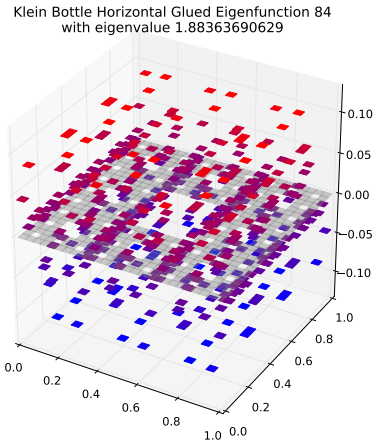


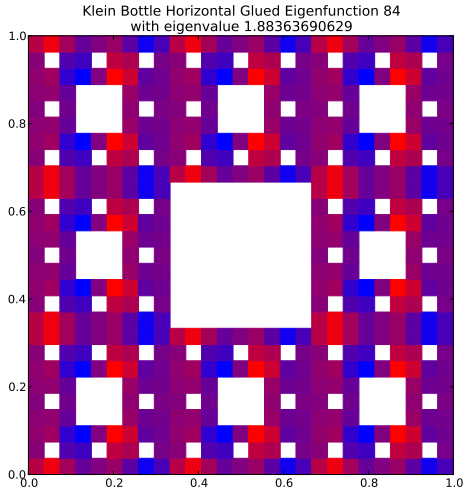


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.468656116731$
Dot Value: 2.220446049250313e-16

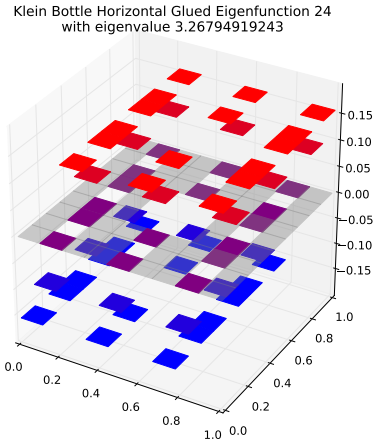
85 $M = 3$ Eigenfunction 84

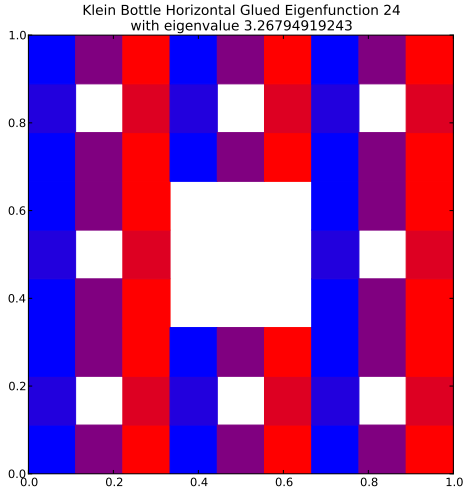
$M = 3$ Eigenfunction 84 has eigenvalue 1.88363690629





Compare to $m = 2$ eigenspace with eigenvalue 3.26794919243

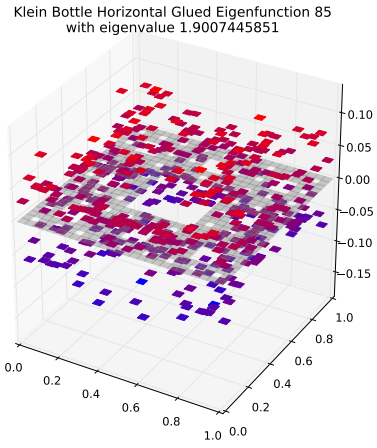


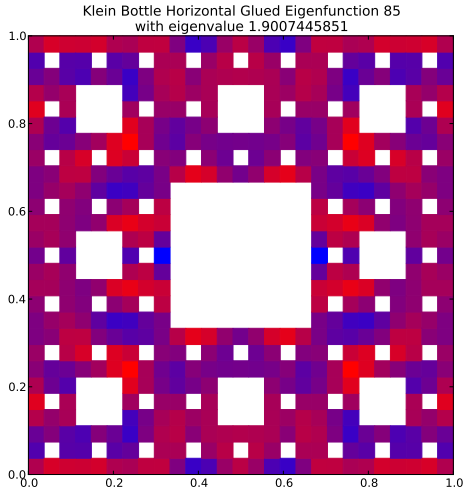


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.576397243462$
Dot Value: 0.1131236807071877

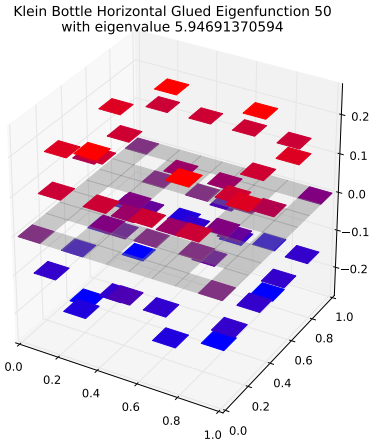
86 $M = 3$ Eigenfunction 85

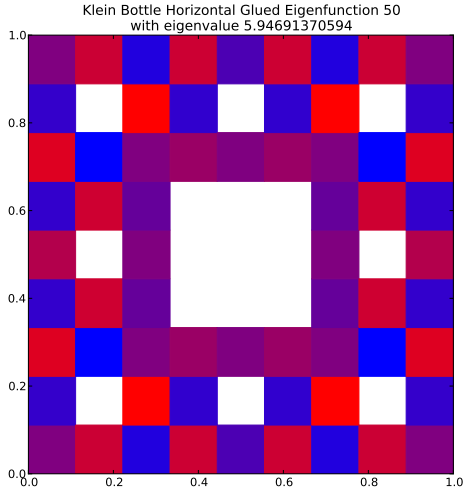
$M = 3$ Eigenfunction 85 has eigenvalue 1.9007445851





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

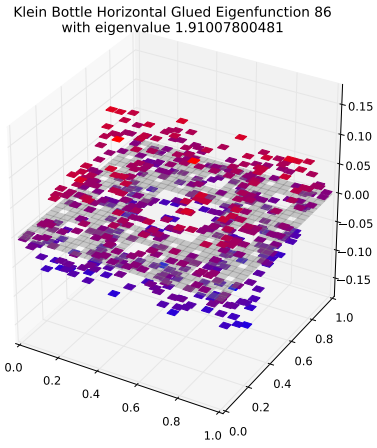


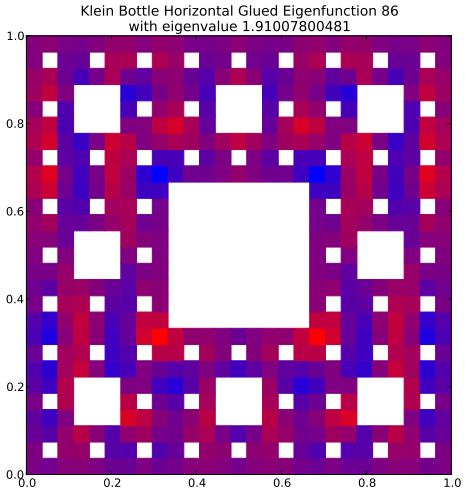


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.319618659205$
Dot Value: 0.42316907141149374

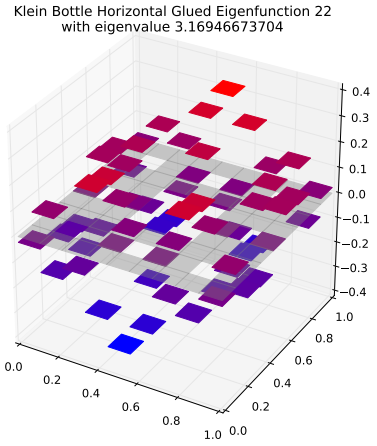
87 $M = 3$ Eigenfunction 86

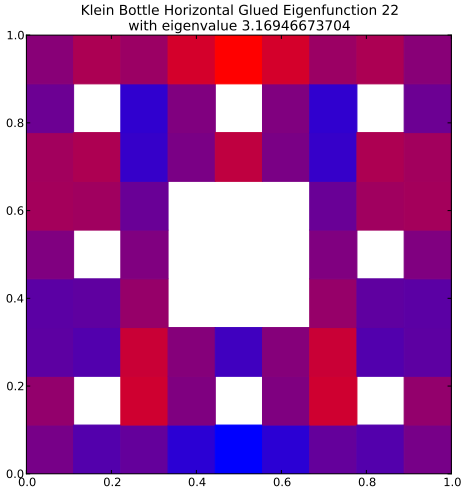
$M = 3$ Eigenfunction 86 has eigenvalue 1.91007800481





Compare to $m = 2$ eigenspace with eigenvalue 3.16946673704

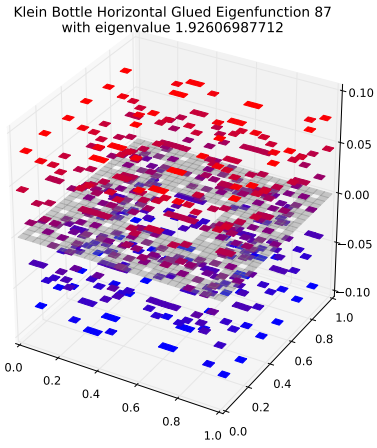


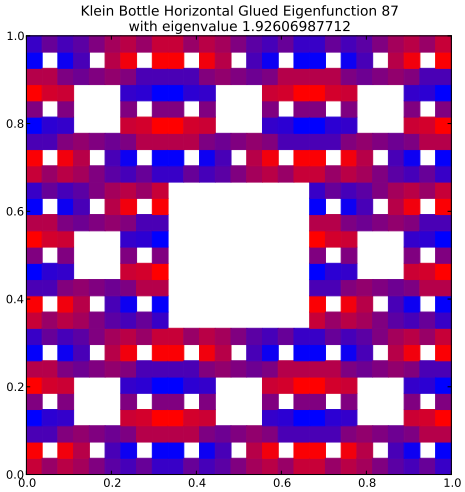


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.602649645282$
Dot Value: 0.5388353506197976

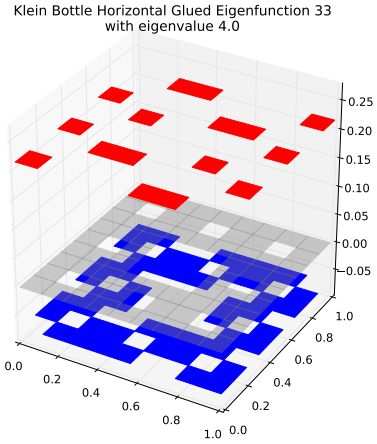
88 $M = 3$ Eigenfunction 87

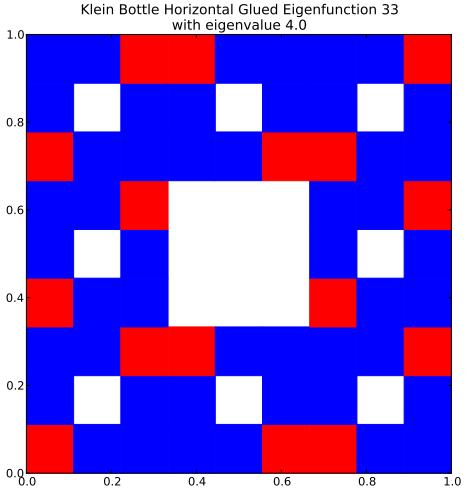
$M = 3$ Eigenfunction 87 has eigenvalue 1.92606987712





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

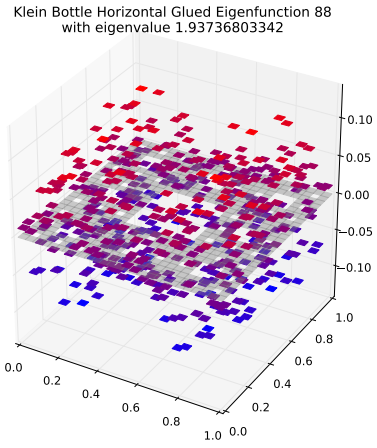


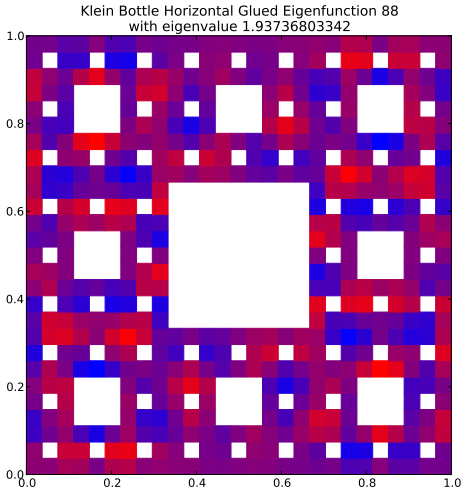


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.481517469281$
Dot Value: 0.0

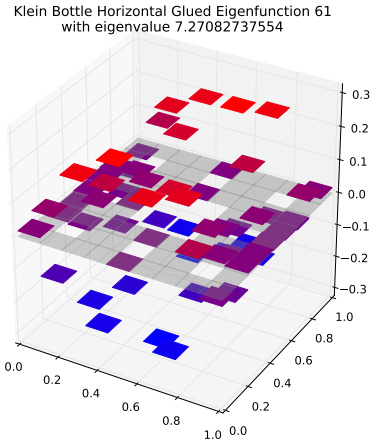
89 $M = 3$ Eigenfunction 88

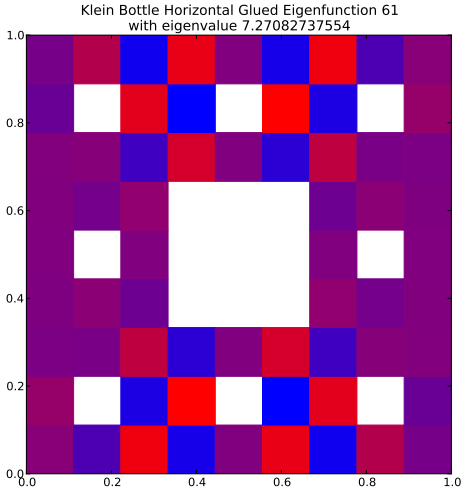
$M = 3$ Eigenfunction 88 has eigenvalue 1.93736803342





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

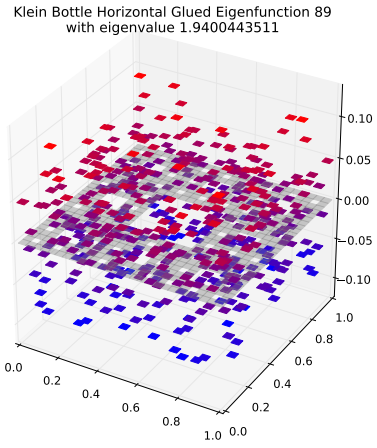


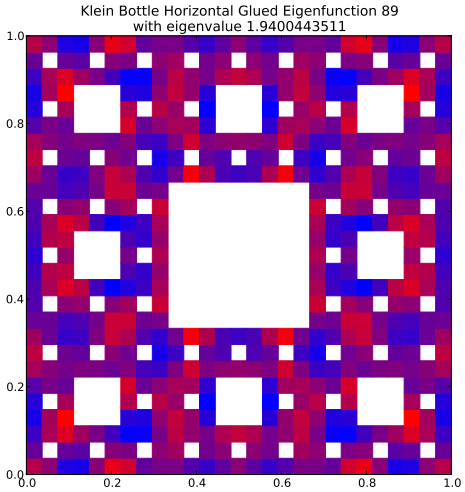


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.266457712906$
Dot Value: 0.32747259870684253

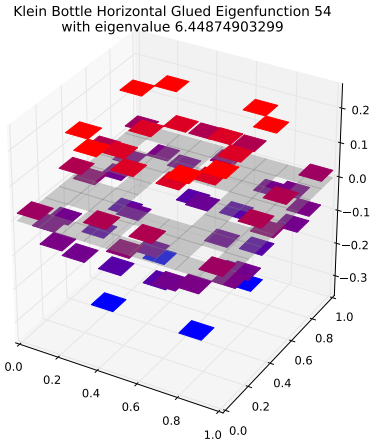
90 $M = 3$ Eigenfunction 89

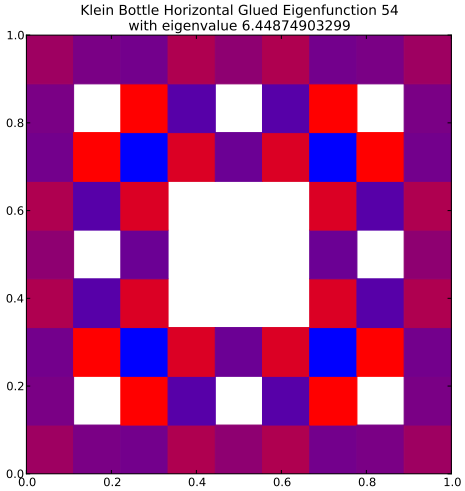
$M = 3$ Eigenfunction 89 has eigenvalue 1.9400443511





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

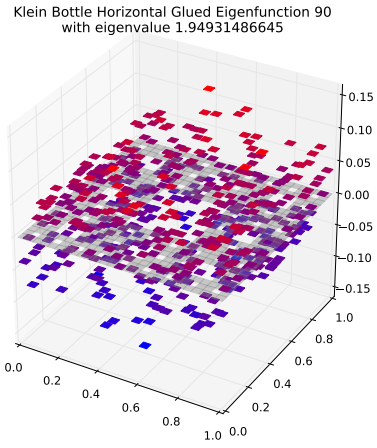


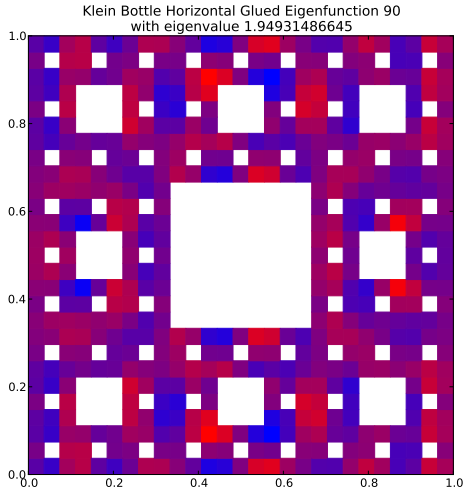


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.300840417448$
Dot Value: 0.2847592280148472

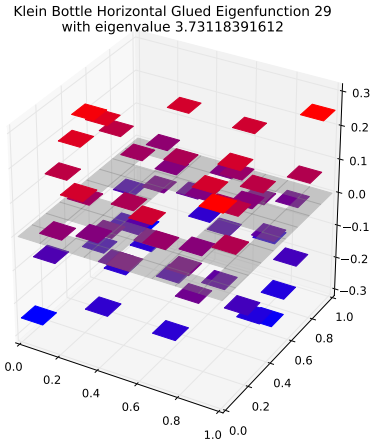
91 $M = 3$ Eigenfunction 90

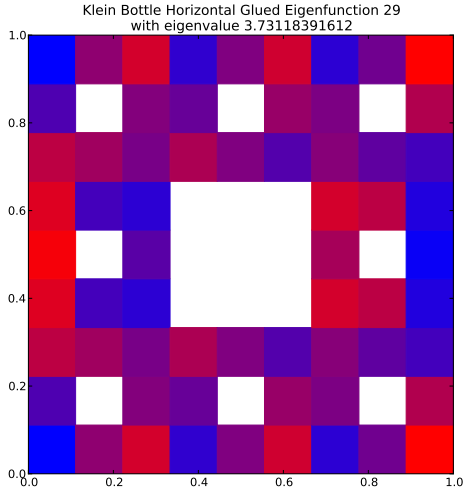
$M = 3$ Eigenfunction 90 has eigenvalue 1.94931486645





Compare to $m = 2$ eigenspace with eigenvalue 3.73118391612

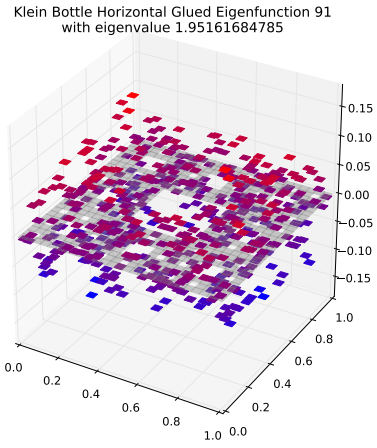


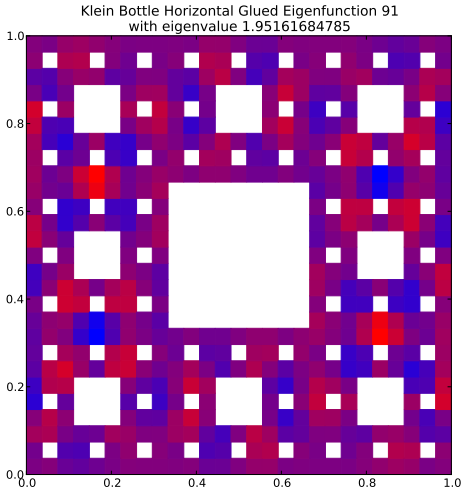


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.522438697817$
Dot Value: 0.5268369081847544

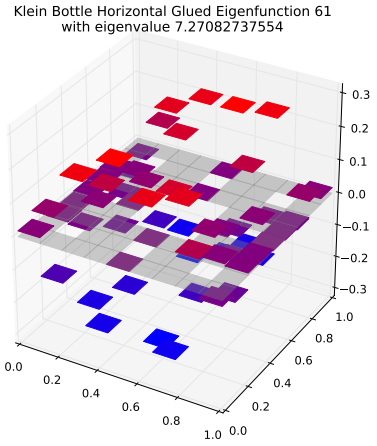
92 $M = 3$ Eigenfunction 91

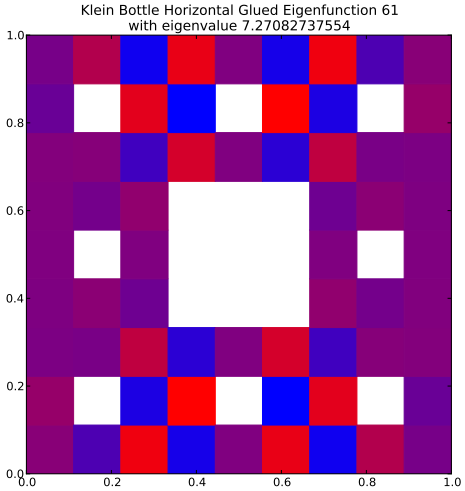
$M = 3$ Eigenfunction 91 has eigenvalue 1.95161684785





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

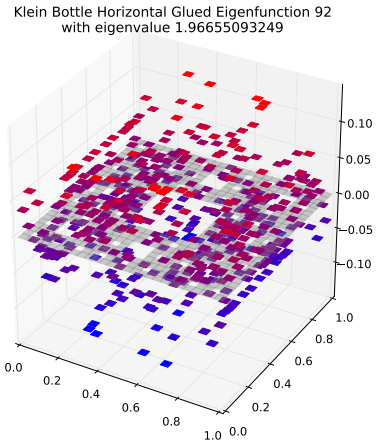


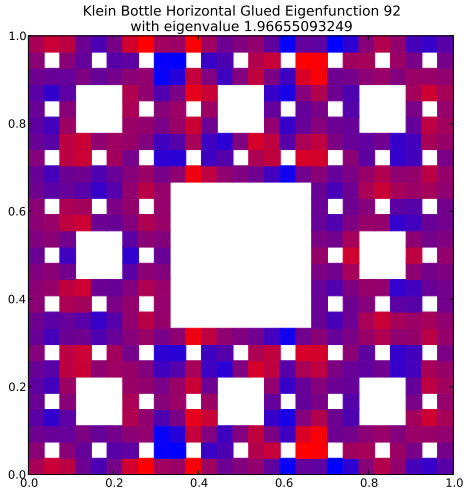


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.26841743684$
Dot Value: 0.269598320889046

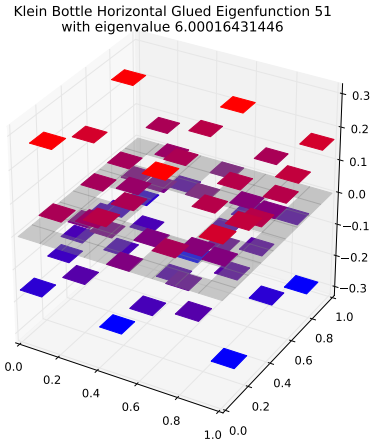
93 $M = 3$ Eigenfunction 92

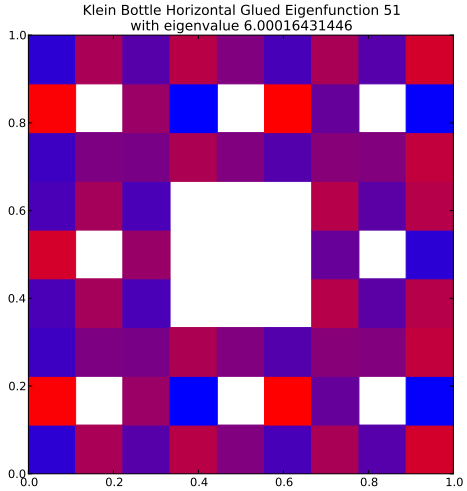
$M = 3$ Eigenfunction 92 has eigenvalue 1.96655093249





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

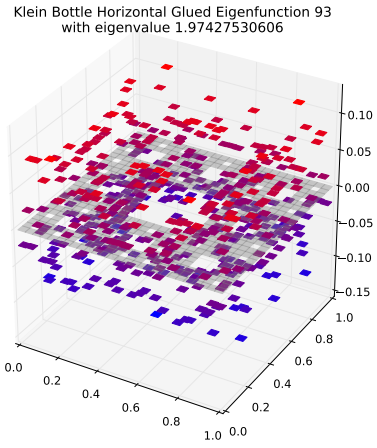


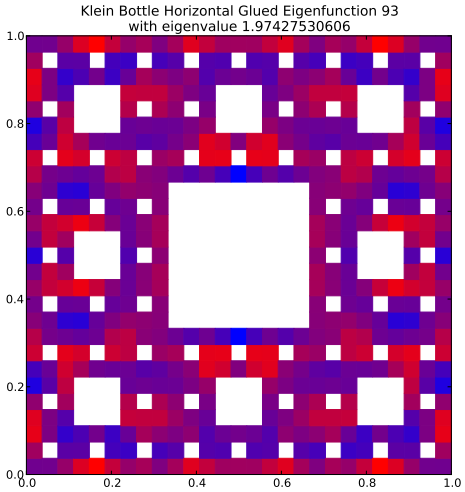


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.327749513084$
Dot Value: 0.23863900621499734

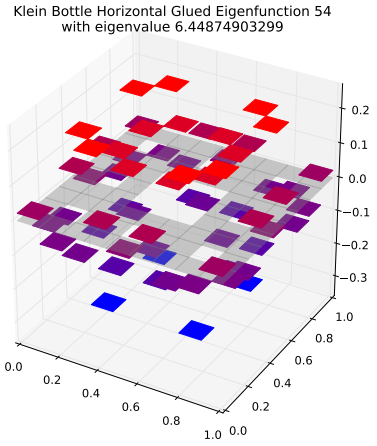
94 $M = 3$ Eigenfunction 93

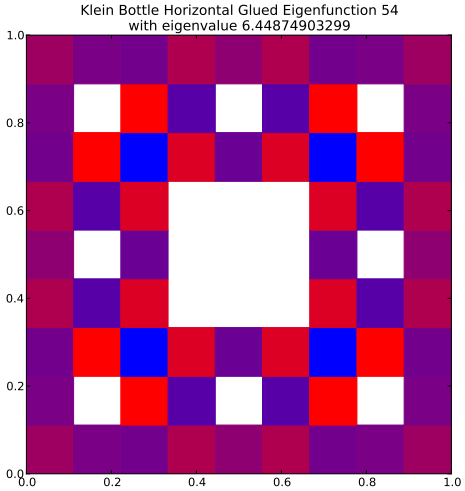
$M = 3$ Eigenfunction 93 has eigenvalue 1.97427530606





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

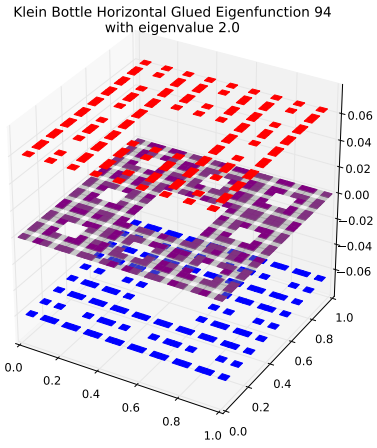


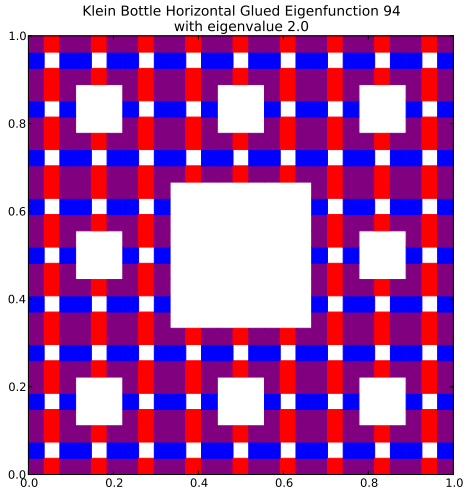


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.306148571756$
Dot Value: 0.5104284160935966

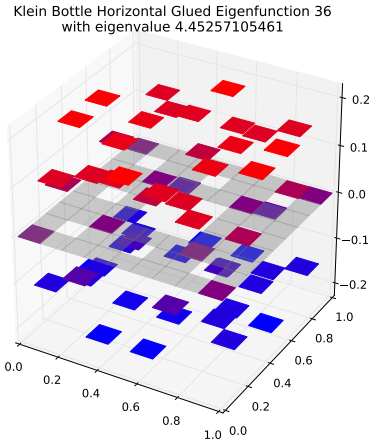
95 $M = 3$ Eigenfunction 94

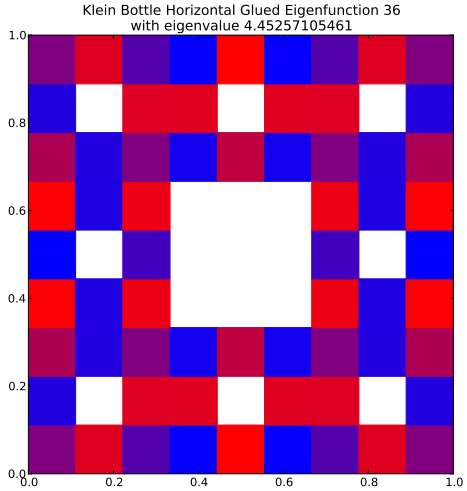
$M = 3$ Eigenfunction 94 has eigenvalue 2.0





Compare to $m = 2$ eigenspace with eigenvalue 4.45257105461

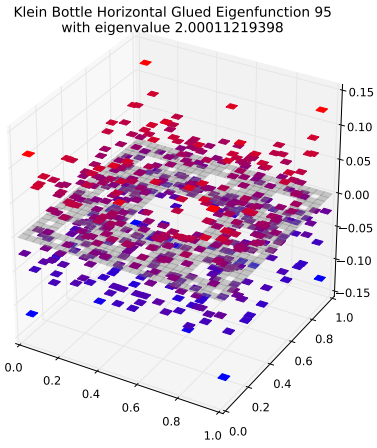


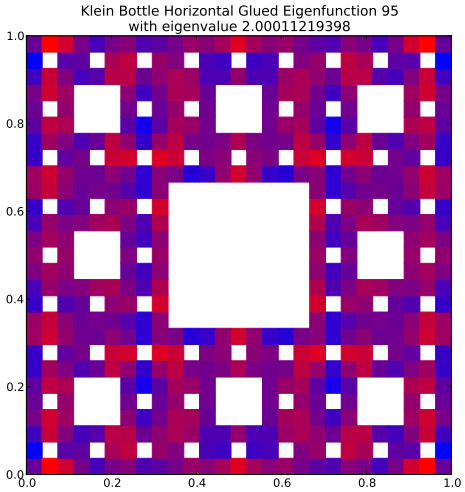


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.44917868249$
Dot Value: 2

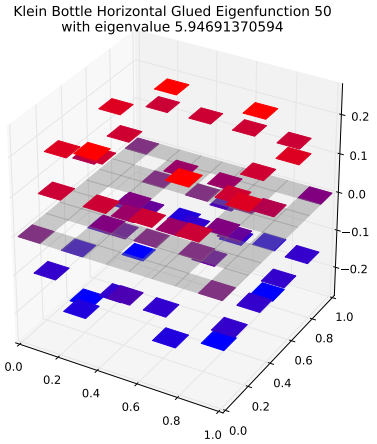
96 $M = 3$ Eigenfunction 95

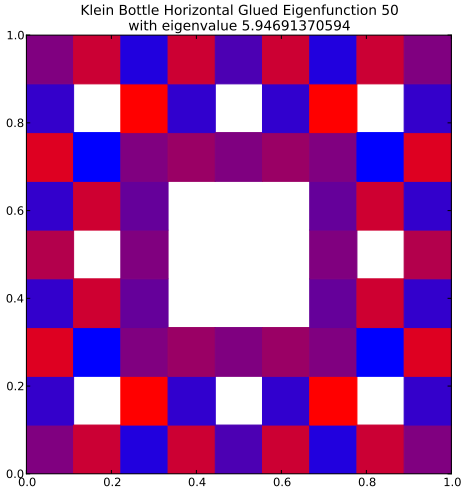
$M = 3$ Eigenfunction 95 has eigenvalue 2.00011219398





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

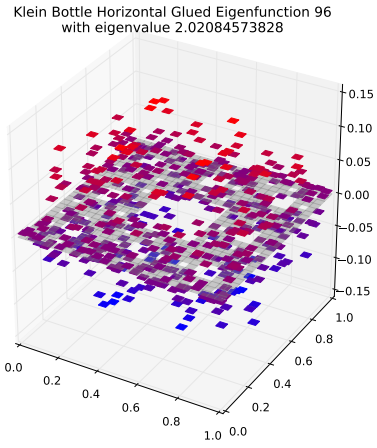


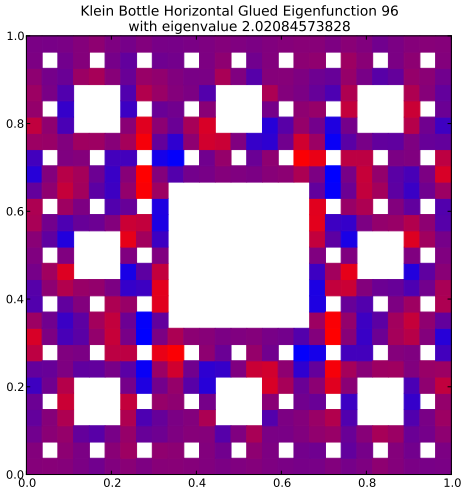


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.336327764768$
Dot Value: 0.4525207479979455

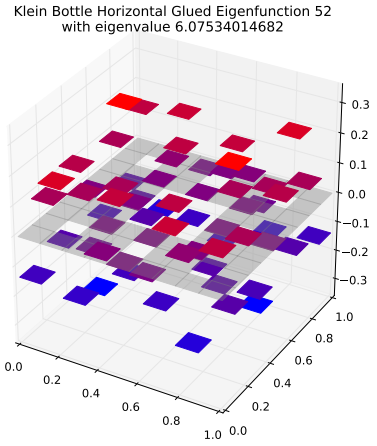
97 $M = 3$ Eigenfunction 96

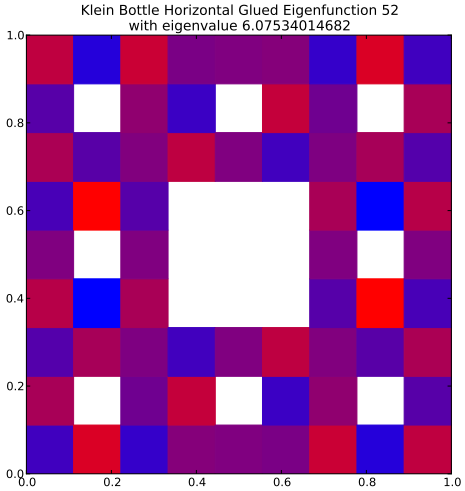
$M = 3$ Eigenfunction 96 has eigenvalue 2.02084573828





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

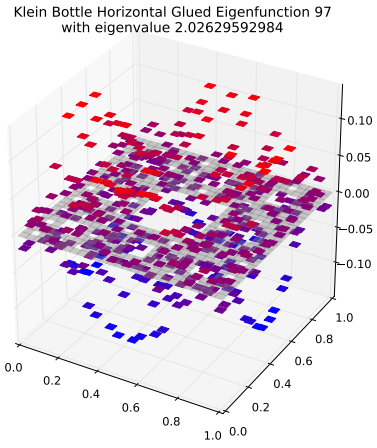


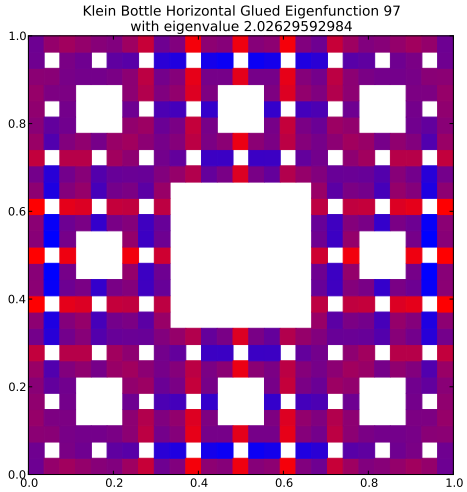


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.332630879827$
Dot Value: 0.2786193239792307

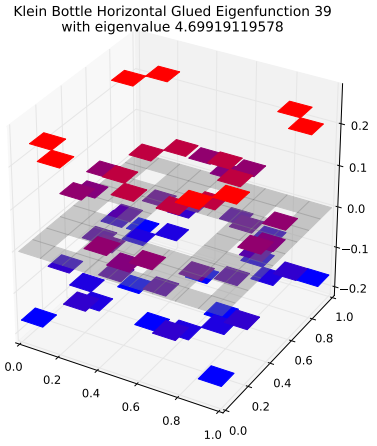
98 $M = 3$ Eigenfunction 97

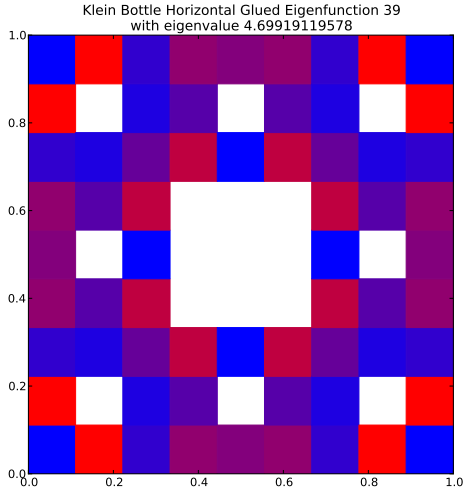
$M = 3$ Eigenfunction 97 has eigenvalue 2.02629592984





Compare to $m = 2$ eigenspace with eigenvalue 4.69919119578

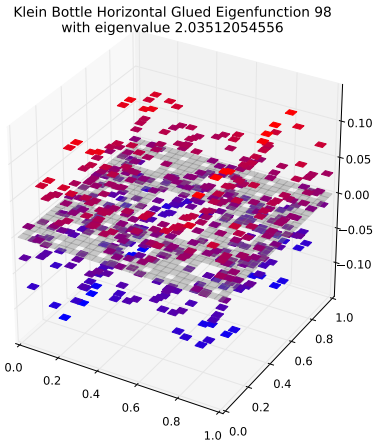


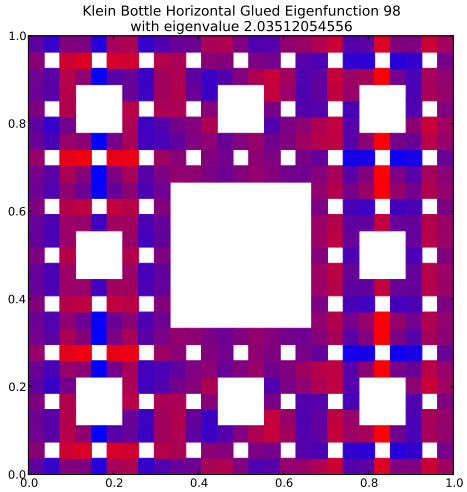


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.431200997238$
Dot Value: 0.359409009233972

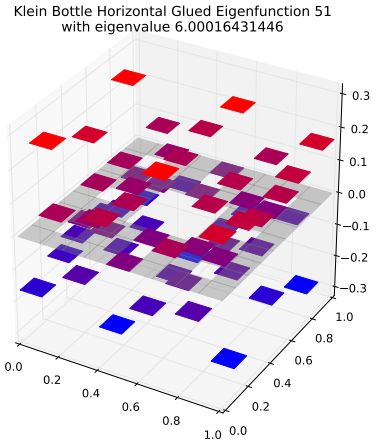
99 $M = 3$ Eigenfunction 98

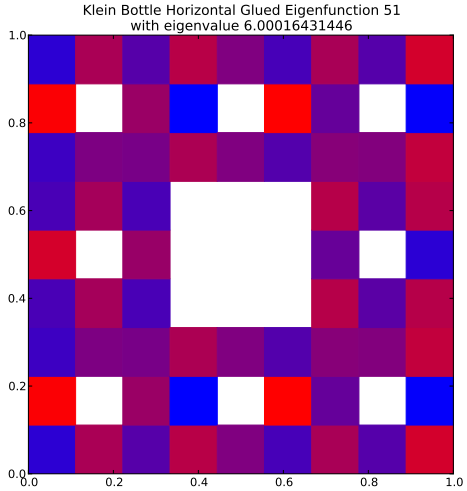
$M = 3$ Eigenfunction 98 has eigenvalue 2.03512054556





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

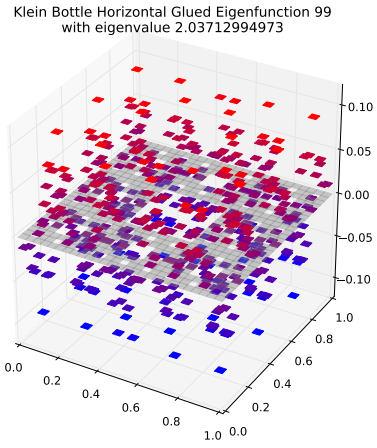


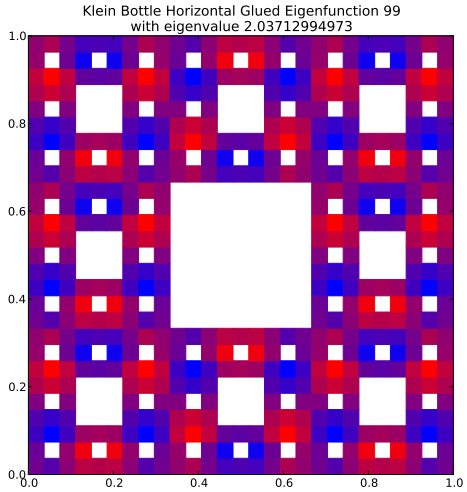


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.339177468966$
Dot Value: 0.5493487157983998

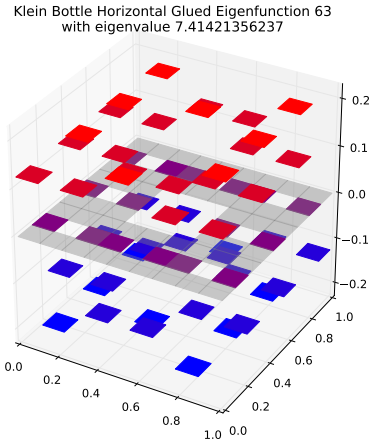
100 $M = 3$ Eigenfunction 99

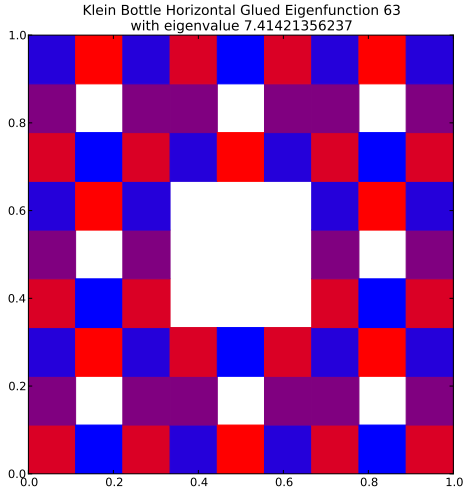
$M = 3$ Eigenfunction 99 has eigenvalue 2.03712994973





Compare to $m = 2$ eigenspace with eigenvalue 7.41421356237

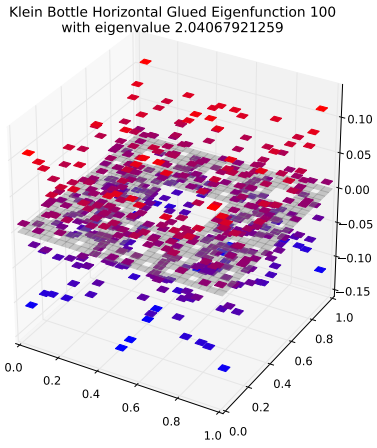


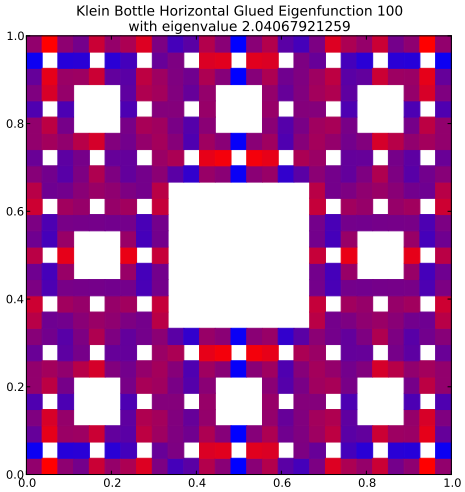


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.274760085152$
Dot Value: 0.0017108198585333856

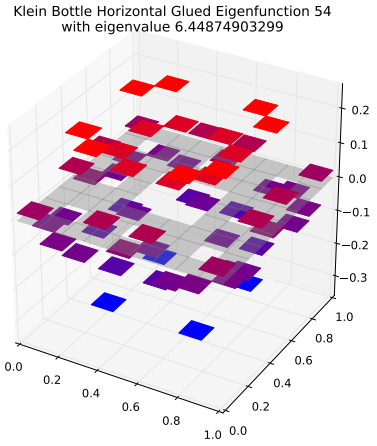
101 $M = 3$ Eigenfunction 100

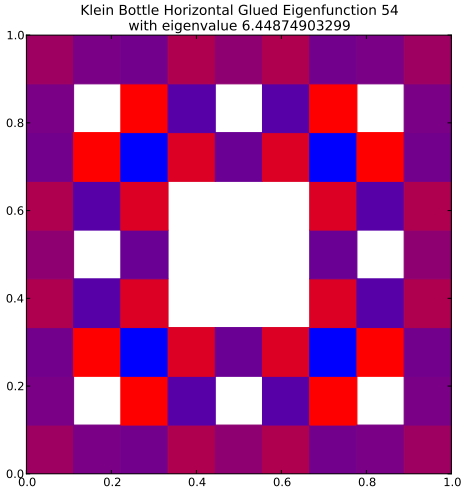
$M = 3$ Eigenfunction 100 has eigenvalue 2.04067921259





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

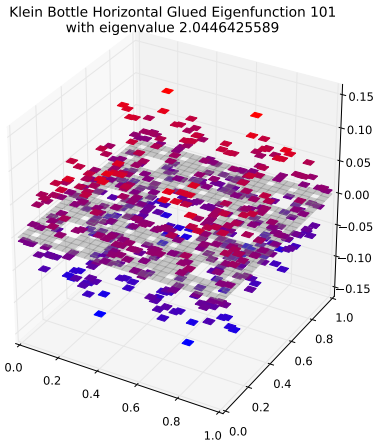


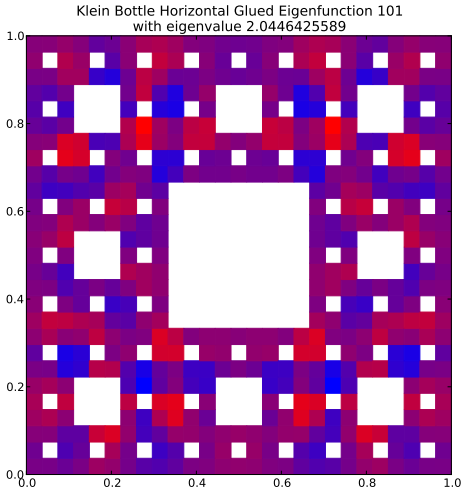


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.316445748183$
Dot Value: 0.4911859568560668

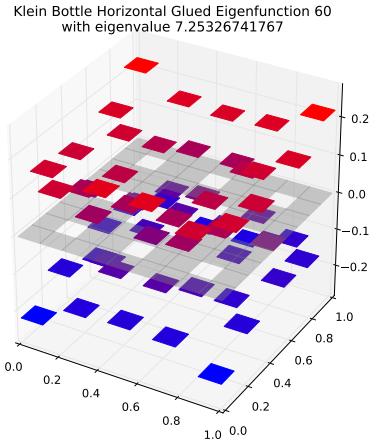
102 $M = 3$ Eigenfunction 101

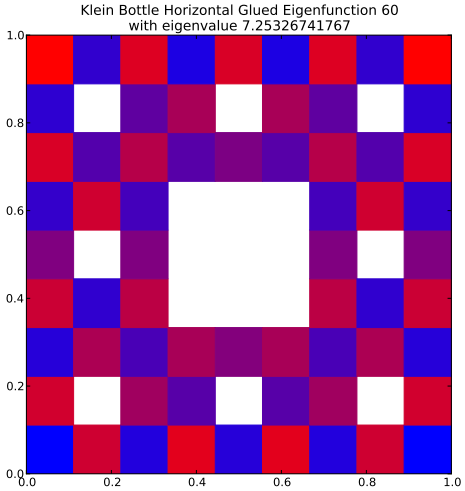
$M = 3$ Eigenfunction 101 has eigenvalue 2.0446425589





Compare to $m = 2$ eigenspace with eigenvalue 7.25326741767

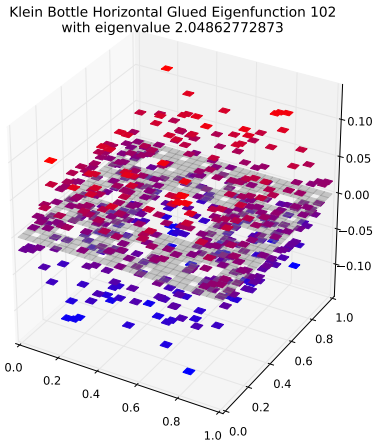


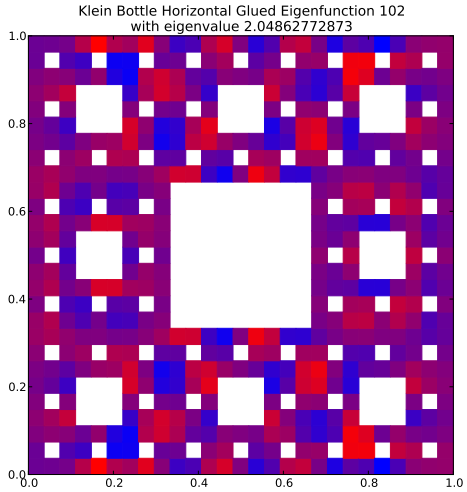


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.281892620409$
Dot Value: 0.3700175288632037

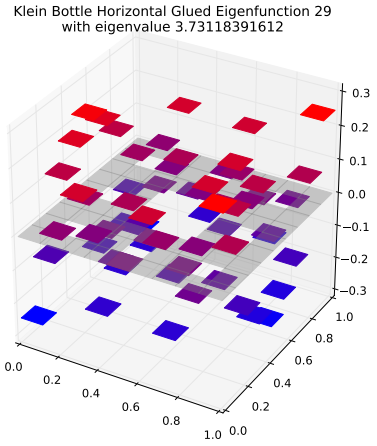
103 $M = 3$ Eigenfunction 102

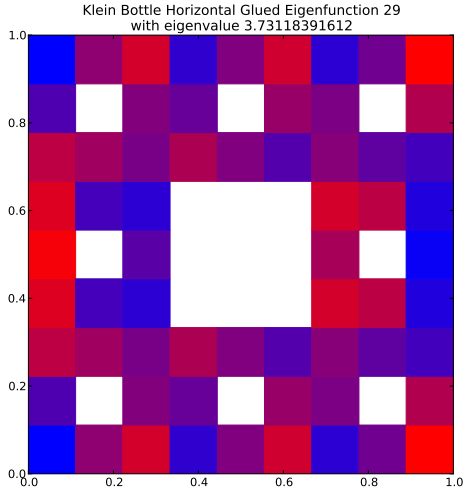
$M = 3$ Eigenfunction 102 has eigenvalue 2.04862772873





Compare to $m = 2$ eigenspace with eigenvalue 3.73118391612

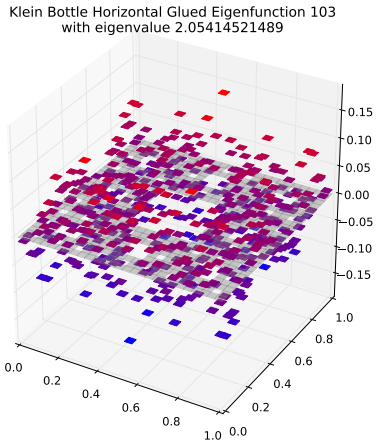


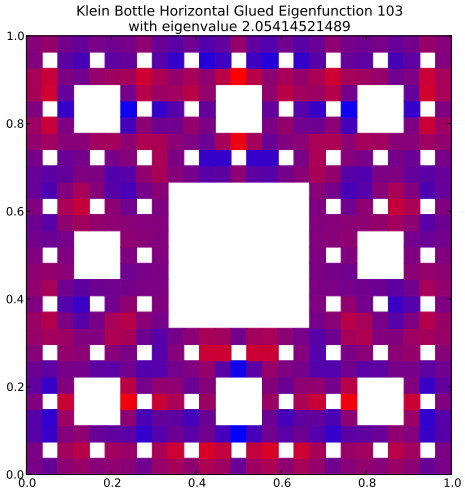


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.54905568173$
Dot Value: 0.3651437694767886

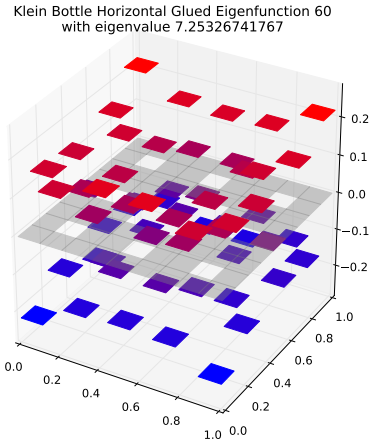
104 $M = 3$ Eigenfunction 103

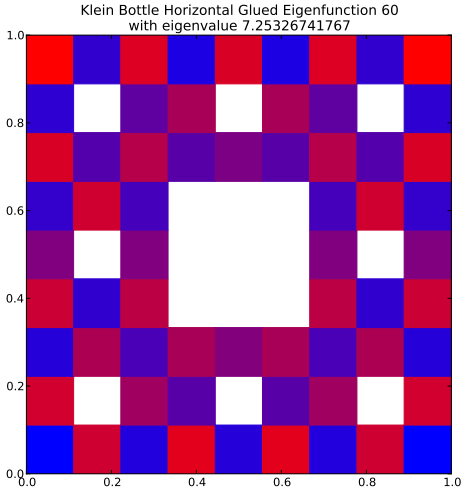
$M = 3$ Eigenfunction 103 has eigenvalue 2.05414521489





Compare to $m = 2$ eigenspace with eigenvalue 7.25326741767

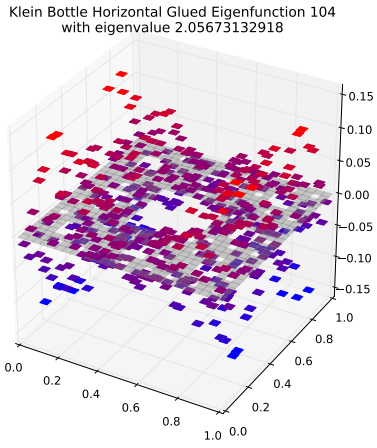


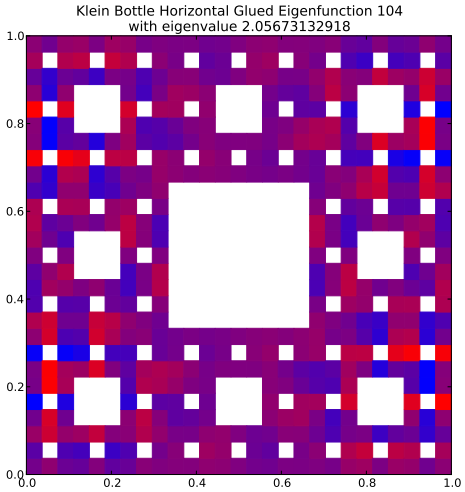


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.283202741137$
Dot Value: 0.3964938006953268

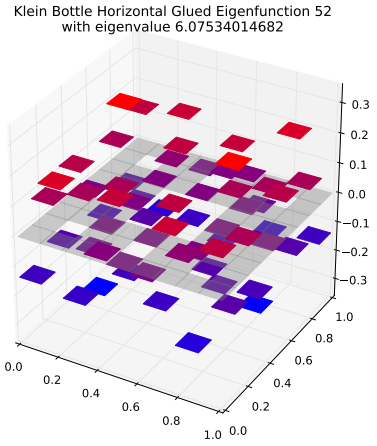
105 $M = 3$ Eigenfunction 104

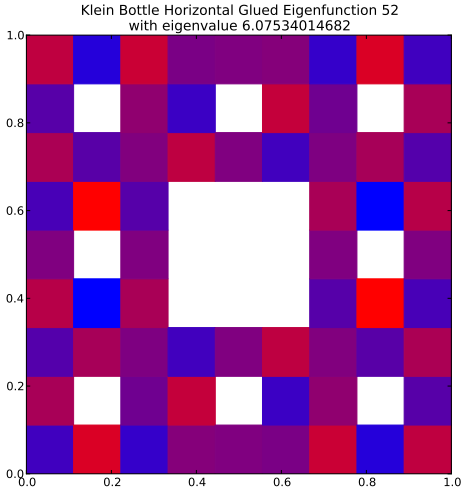
$M = 3$ Eigenfunction 104 has eigenvalue 2.05673132918





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

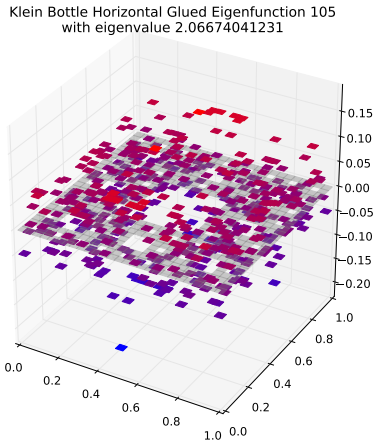


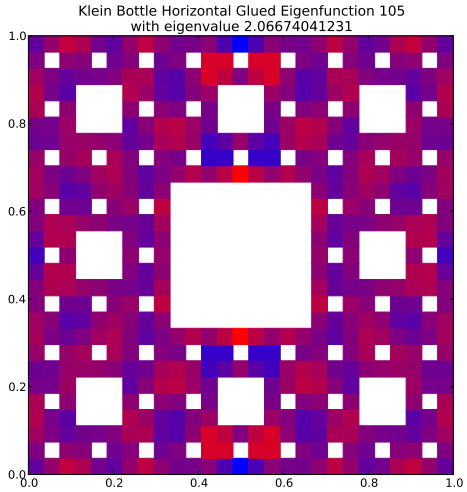


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.338537642252$
Dot Value: 0.5825305796459691

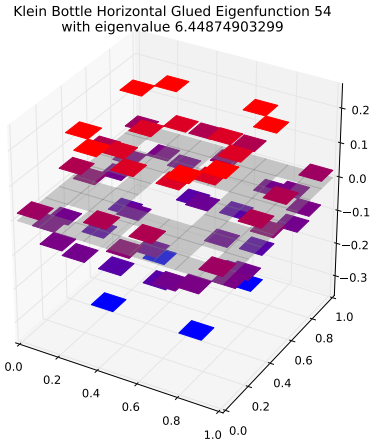
106 $M = 3$ Eigenfunction 105

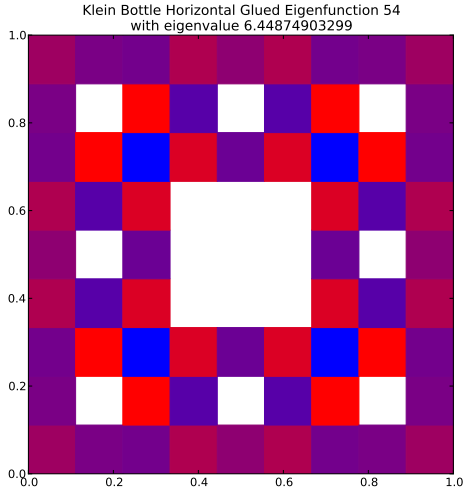
$M = 3$ Eigenfunction 105 has eigenvalue 2.06674041231





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

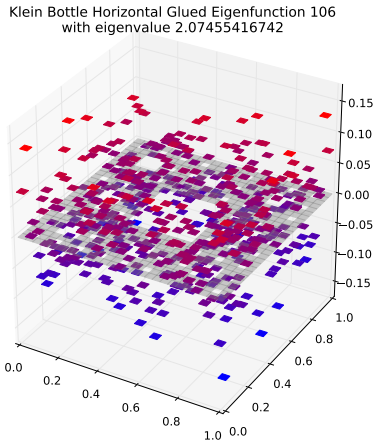


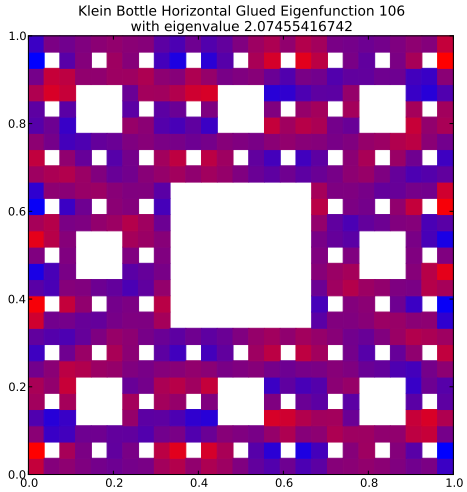


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.320487028063$
Dot Value: 0.3735691922308576

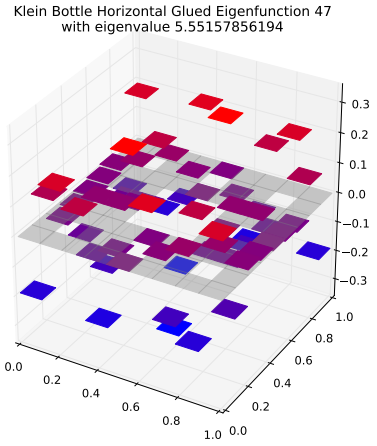
107 $M = 3$ Eigenfunction 106

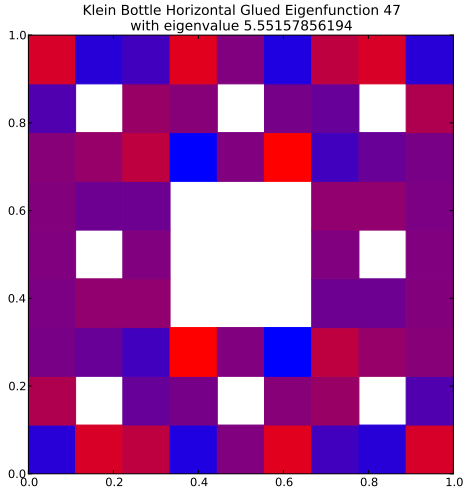
$M = 3$ Eigenfunction 106 has eigenvalue 2.07455416742





Compare to $m = 2$ eigenspace with eigenvalue 5.55157856194

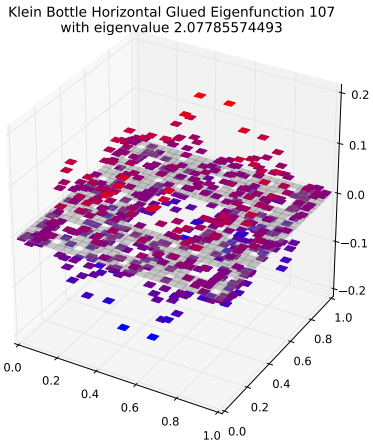


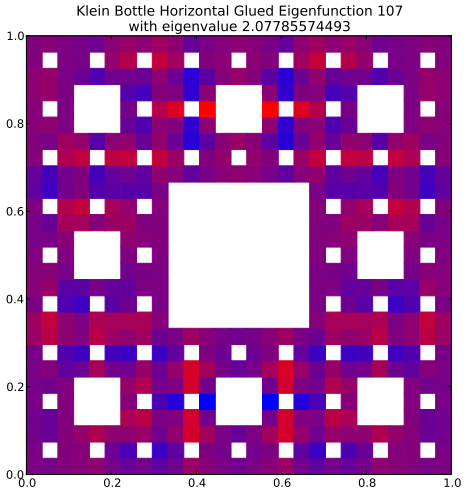


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.373687257467$
Dot Value: 0.32135406431464786

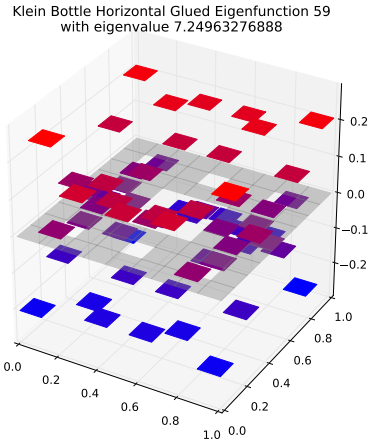
108 $M = 3$ Eigenfunction 107

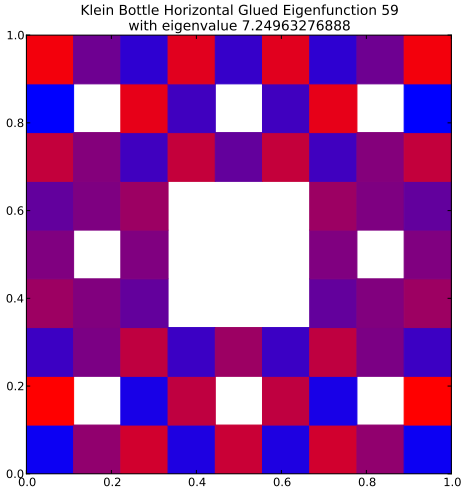
$M = 3$ Eigenfunction 107 has eigenvalue 2.07785574493





Compare to $m = 2$ eigenspace with eigenvalue 7.24963276888

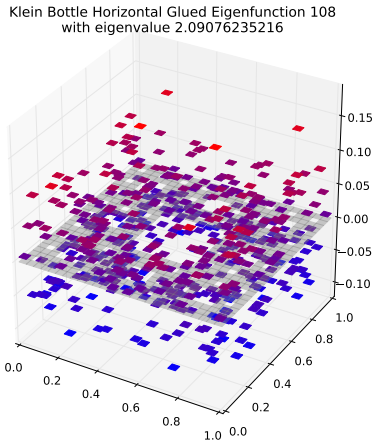


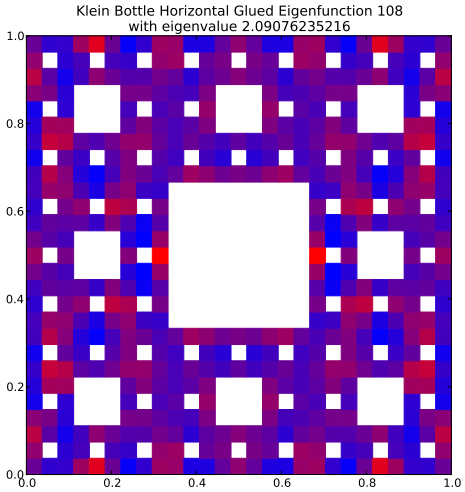


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.286615310206$
Dot Value: 0.348299905695193

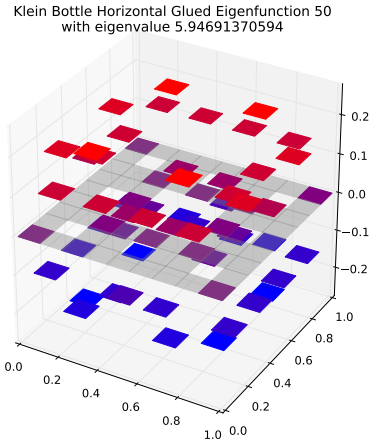
109 $M = 3$ Eigenfunction 108

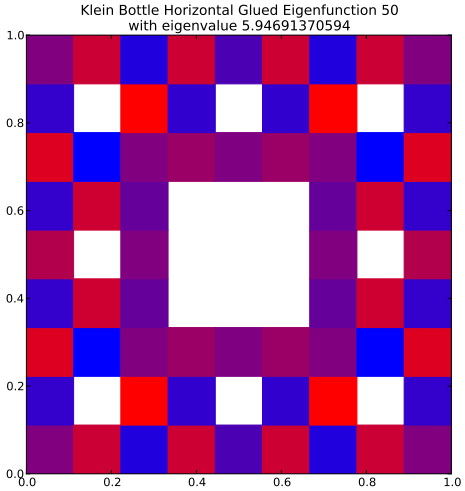
$M = 3$ Eigenfunction 108 has eigenvalue 2.09076235216





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

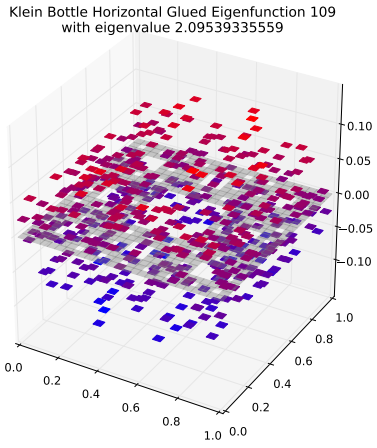


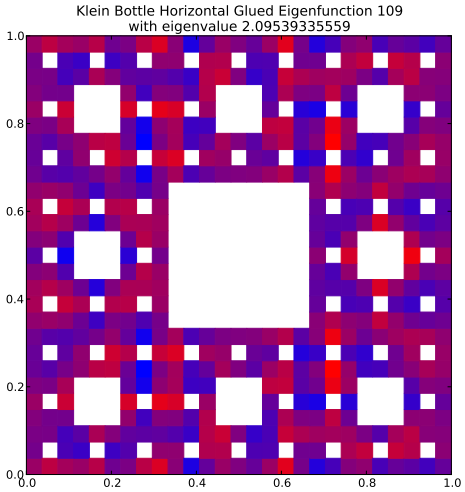


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.351570992206$
Dot Value: 0.47041846106467444

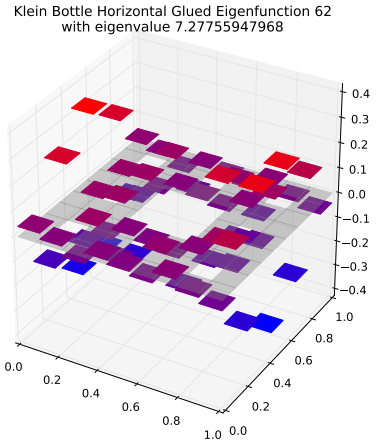
110 $M = 3$ Eigenfunction 109

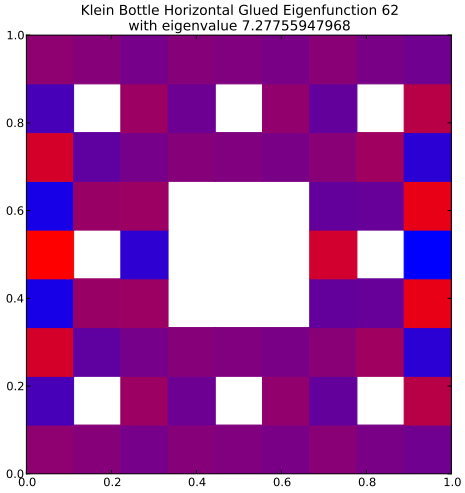
$M = 3$ Eigenfunction 109 has eigenvalue 2.09539335559





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

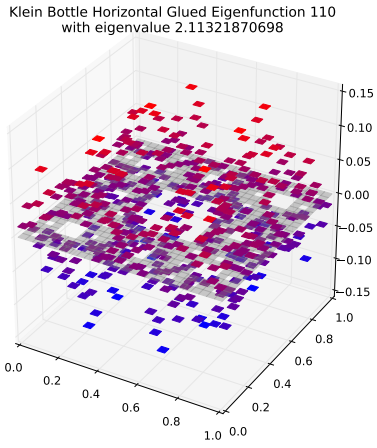


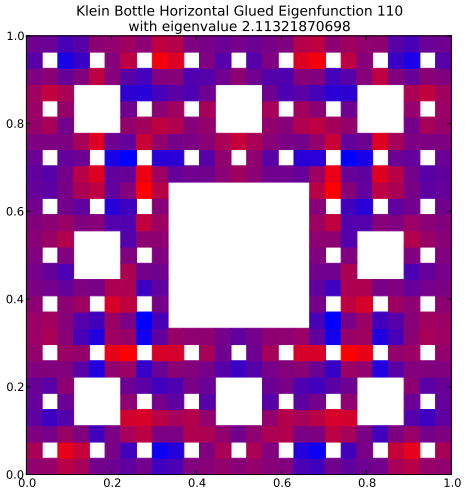


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.287925280644$
Dot Value: 0.2717676960570785

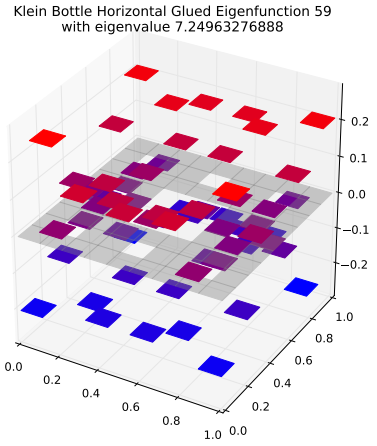
111 $M = 3$ Eigenfunction 110

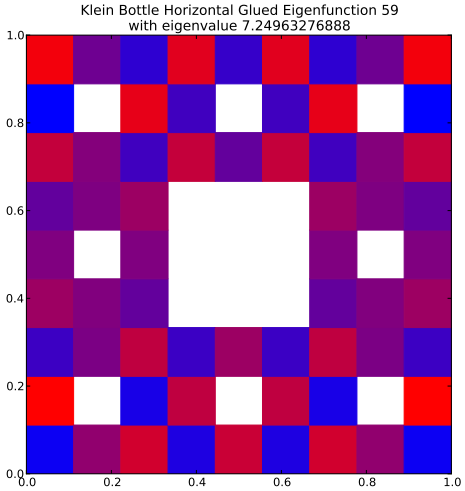
$M = 3$ Eigenfunction 110 has eigenvalue 2.11321870698





Compare to $m = 2$ eigenspace with eigenvalue 7.24963276888

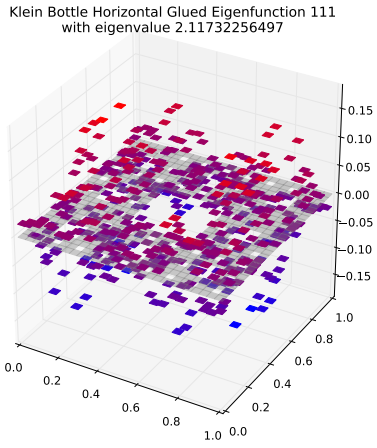


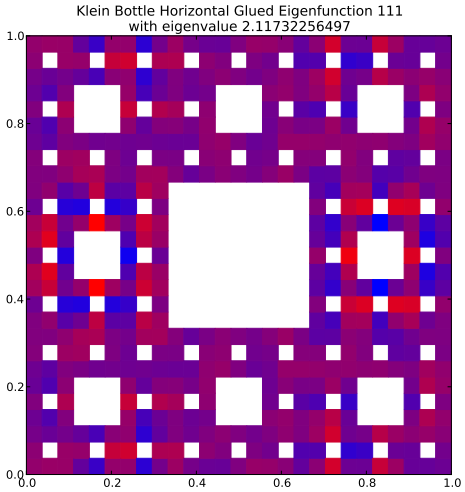


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.291493207221$
Dot Value: 0.41179307630053885

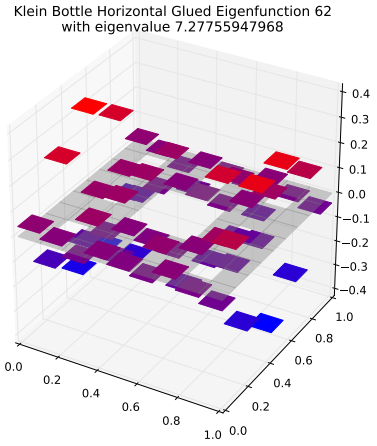
112 $M = 3$ Eigenfunction 111

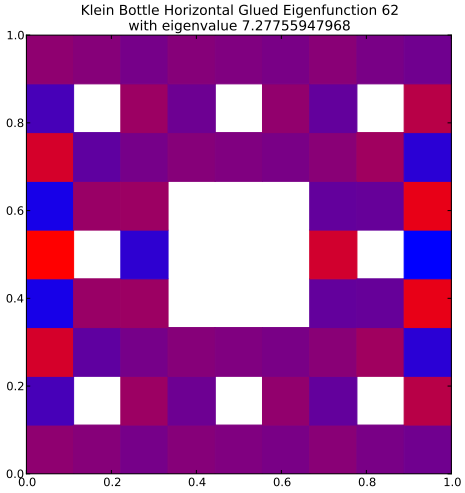
$M = 3$ Eigenfunction 111 has eigenvalue 2.11732256497





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

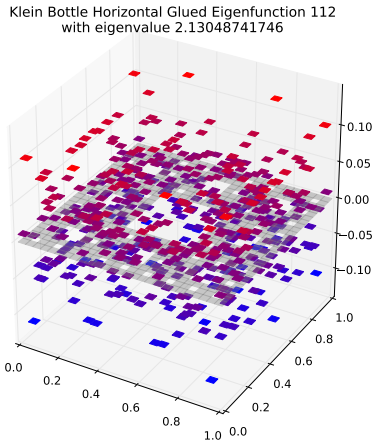


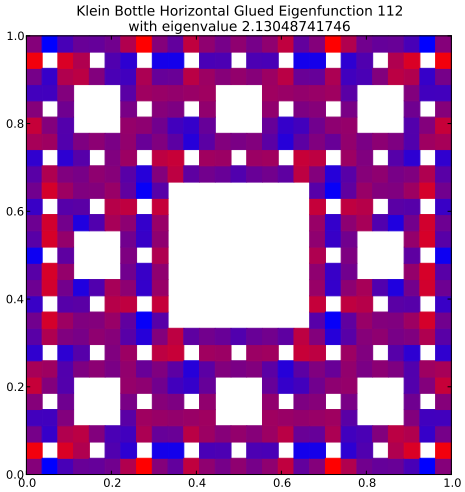


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.290938544835$
Dot Value: 0.508164131162447

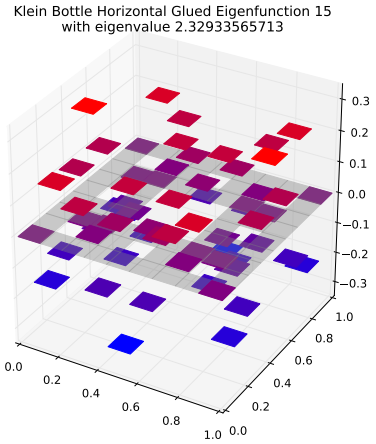
113 $M = 3$ Eigenfunction 112

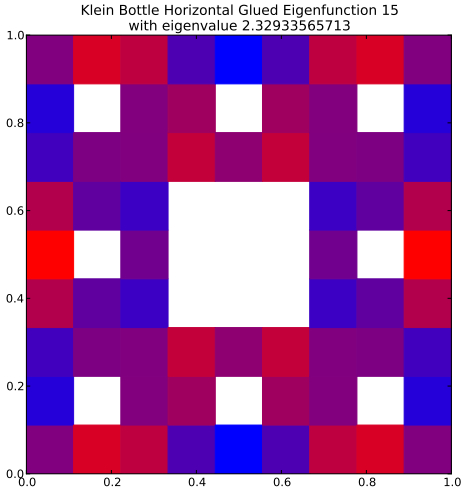
$M = 3$ Eigenfunction 112 has eigenvalue 2.13048741746





Compare to $m = 2$ eigenspace with eigenvalue 2.32933565713

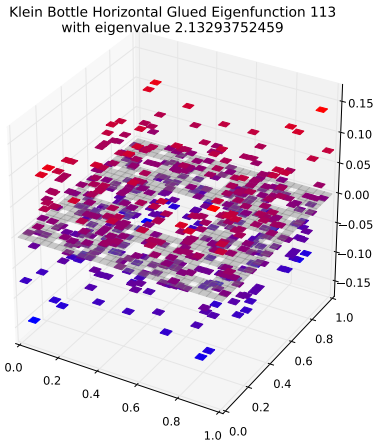


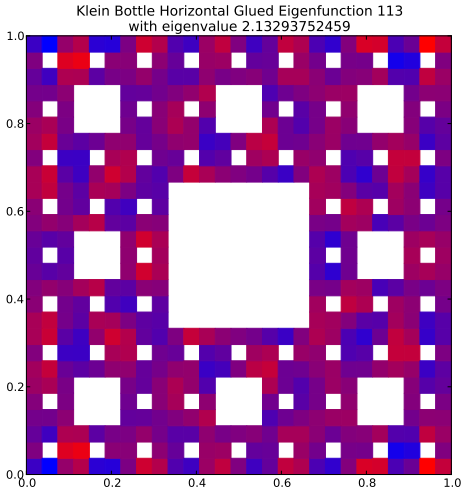


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.914633067559$
Dot Value: 0.5060054879258207

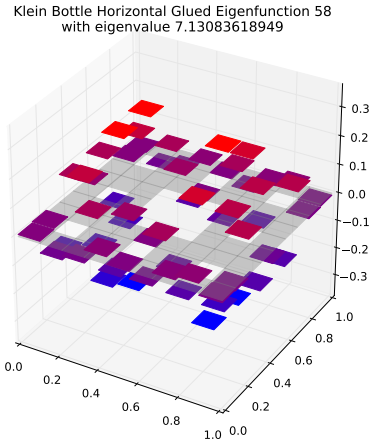
114 $M = 3$ Eigenfunction 113

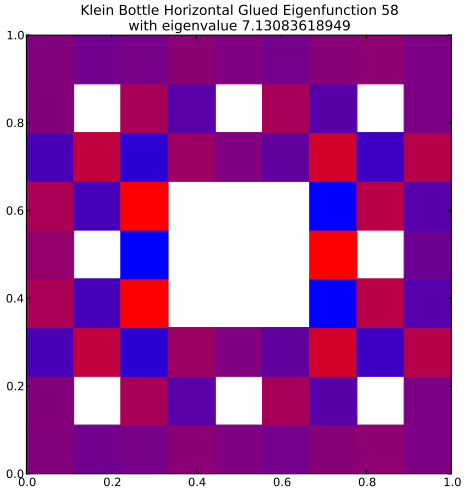
$M = 3$ Eigenfunction 113 has eigenvalue 2.13293752459





Compare to $m = 2$ eigenspace with eigenvalue 7.13083618949

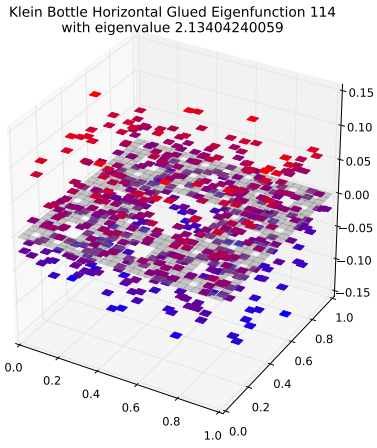


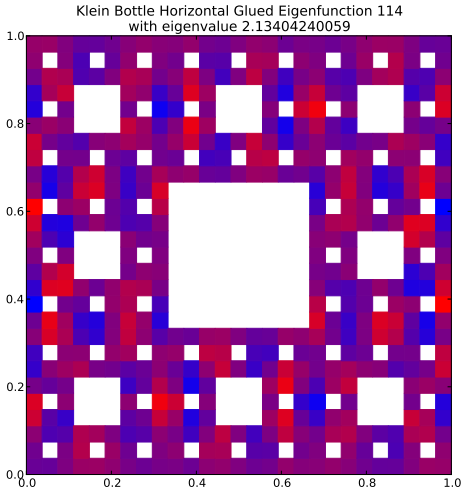


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.299114643487$
Dot Value: 0.41795312925718586

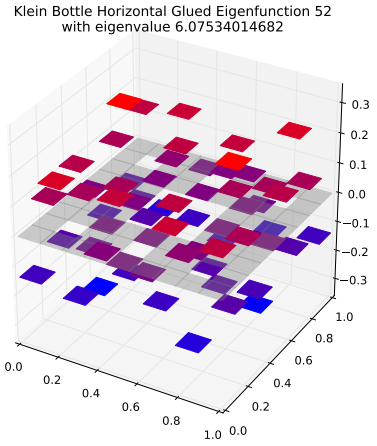
115 $M = 3$ Eigenfunction 114

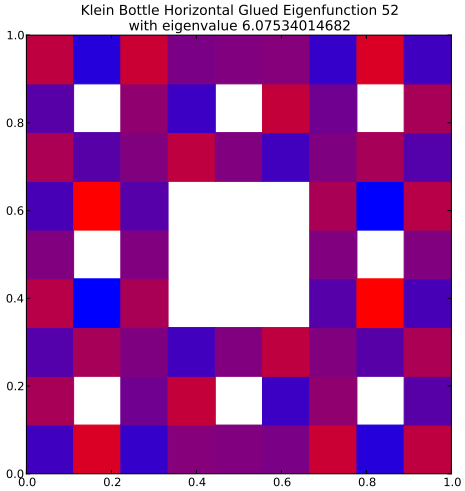
$M = 3$ Eigenfunction 114 has eigenvalue 2.13404240059





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

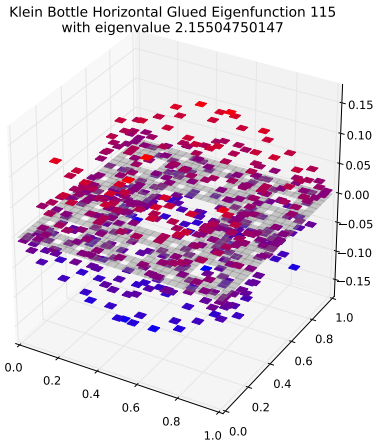


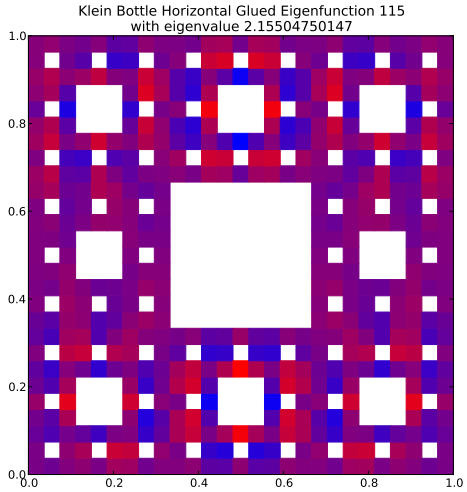


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.351263032031$
Dot Value: 0.46124592015462784

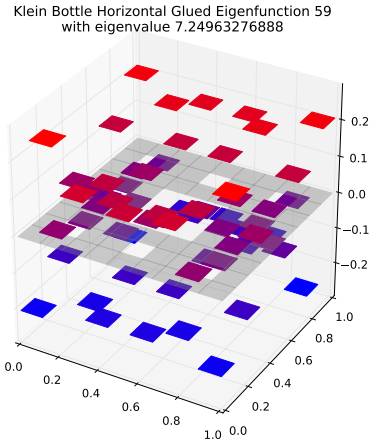
116 $M = 3$ Eigenfunction 115

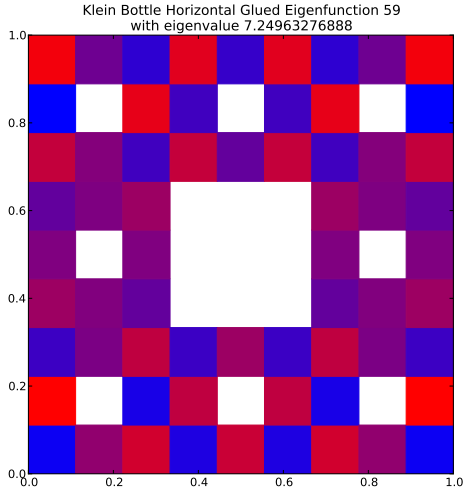
$M = 3$ Eigenfunction 115 has eigenvalue 2.15504750147





Compare to $m = 2$ eigenspace with eigenvalue 7.24963276888

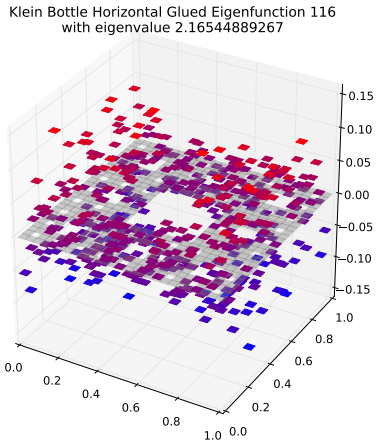


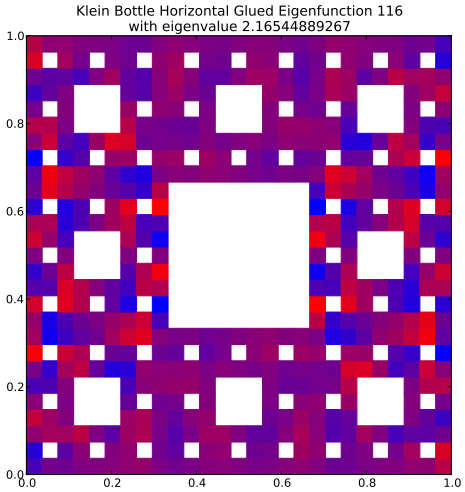


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.29726298837$
Dot Value: 0.42082876646795675

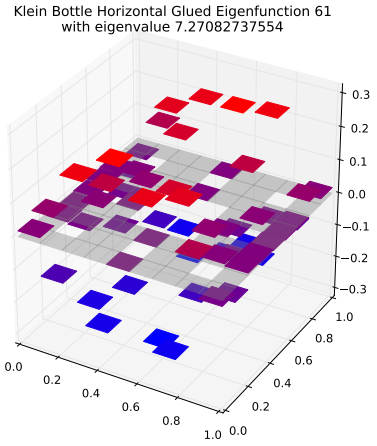
117 $M = 3$ Eigenfunction 116

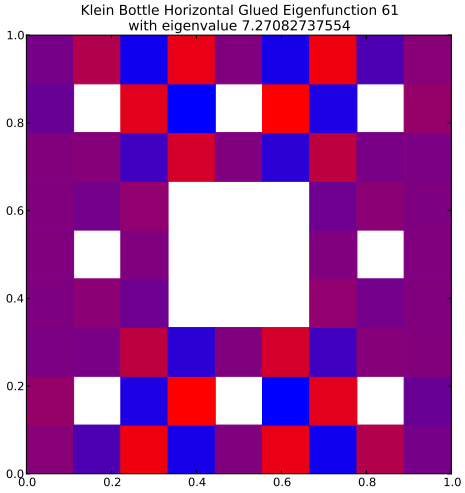
$M = 3$ Eigenfunction 116 has eigenvalue 2.16544889267





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

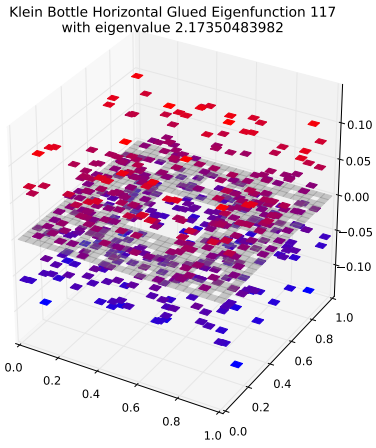


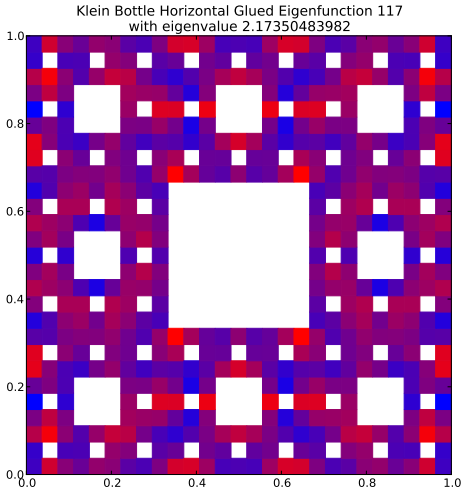


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.297827025842$
Dot Value: 0.49103019390917513

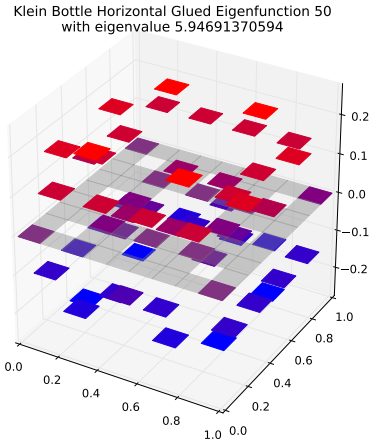
118 $M = 3$ Eigenfunction 117

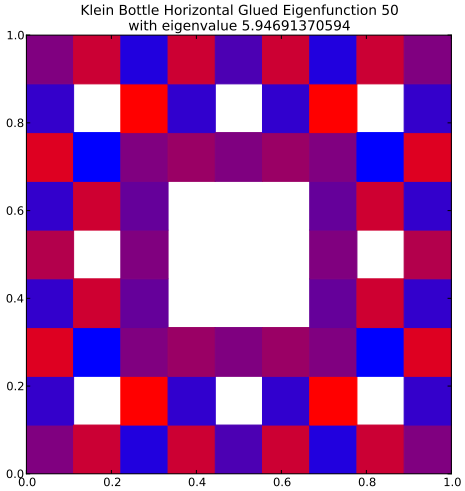
$M = 3$ Eigenfunction 117 has eigenvalue 2.17350483982





Compare to $m = 2$ eigenspace with eigenvalue 5.94691370594

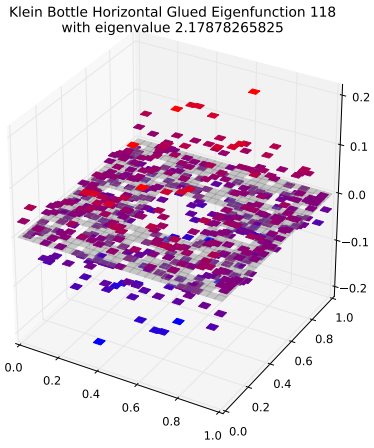


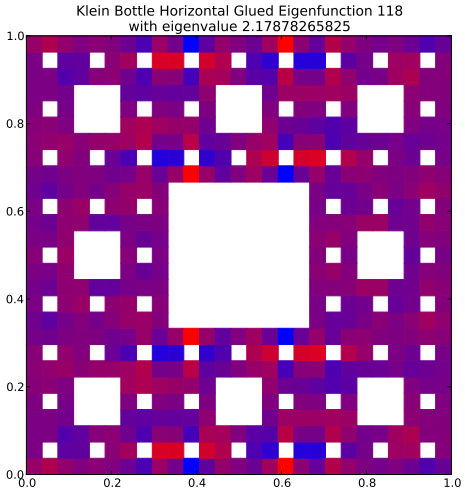


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.365484509662$
Dot Value: 0.3883365675779792

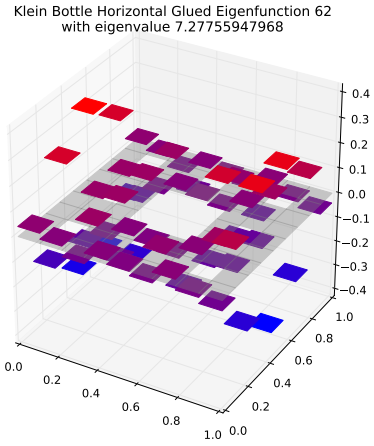
119 $M = 3$ Eigenfunction 118

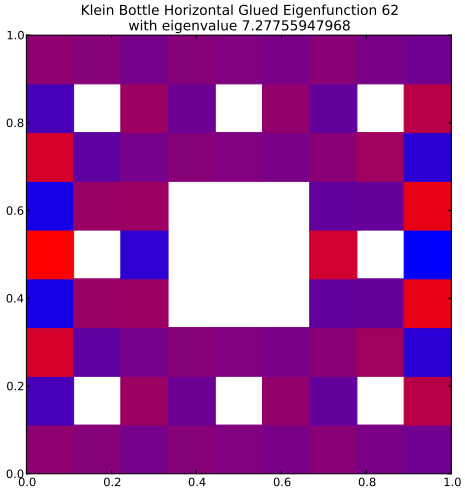
$M = 3$ Eigenfunction 118 has eigenvalue 2.17878265825





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

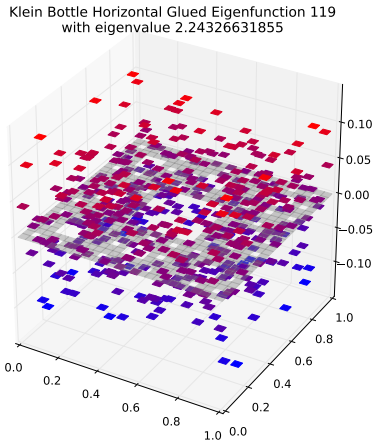


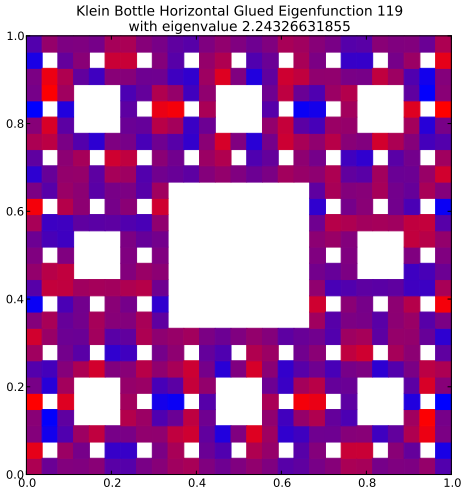


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.299383696462$
Dot Value: 0.31822354484543913

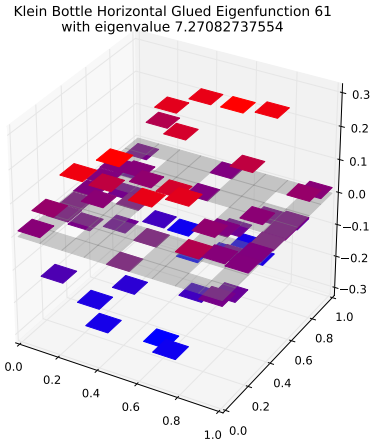
120 $M = 3$ Eigenfunction 119

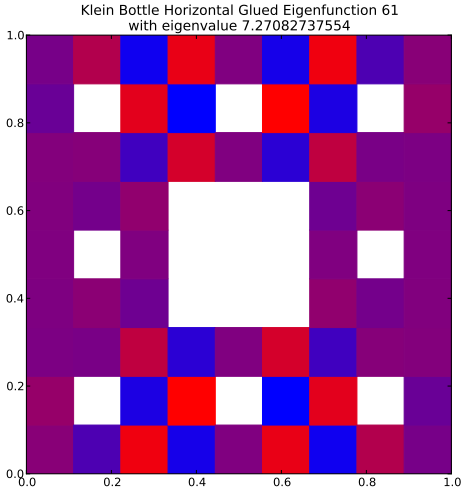
$M = 3$ Eigenfunction 119 has eigenvalue 2.24326631855





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

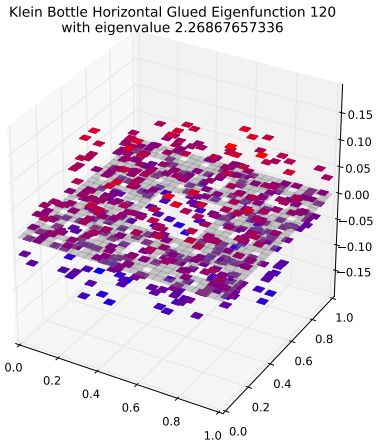


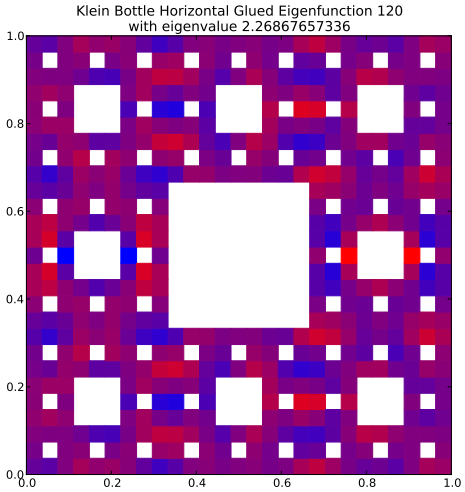


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.308529717828$
Dot Value: 0.46226216059330993

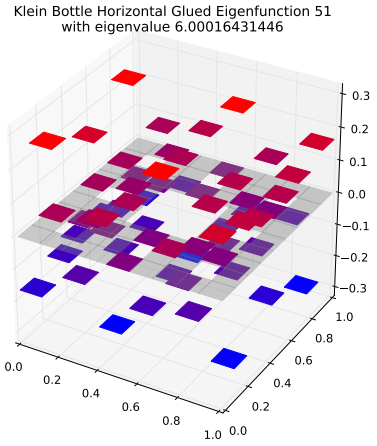
121 $M = 3$ Eigenfunction 120

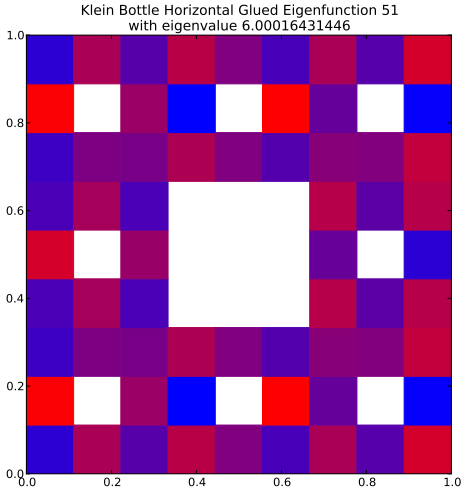
$M = 3$ Eigenfunction 120 has eigenvalue 2.26867657336





Compare to $m = 2$ eigenspace with eigenvalue 6.00016431446

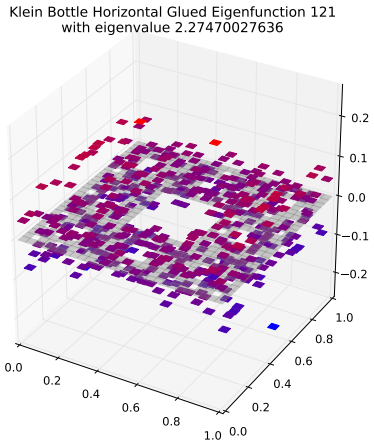


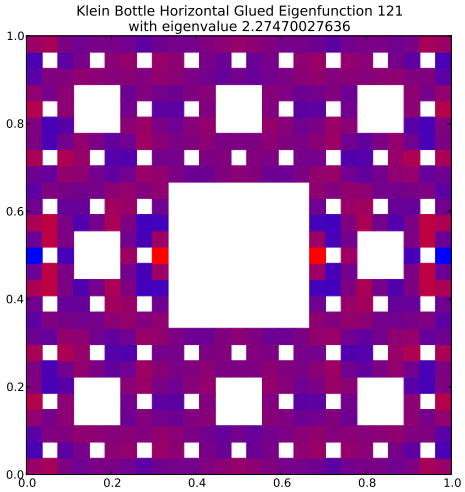


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.378102407612$
Dot Value: 0.3572913234255721

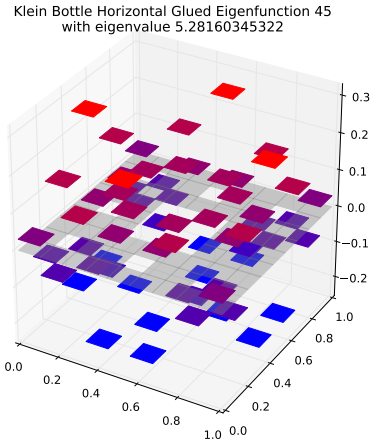
122 $M = 3$ Eigenfunction 121

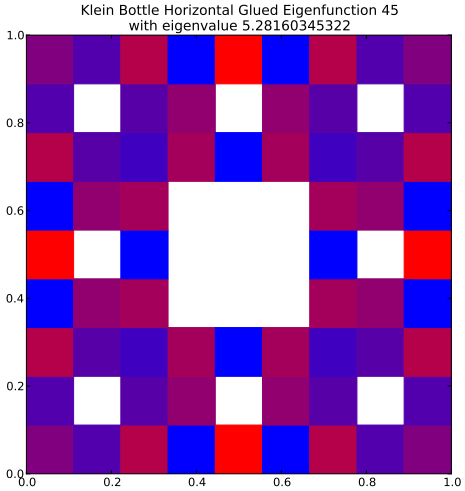
$M = 3$ Eigenfunction 121 has eigenvalue 2.27470027636





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

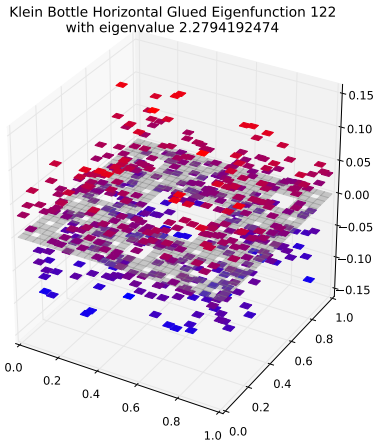


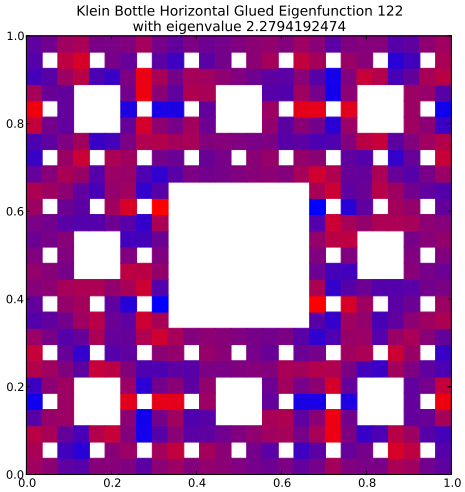


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.430683654407$
Dot Value: 0.4401670981515956

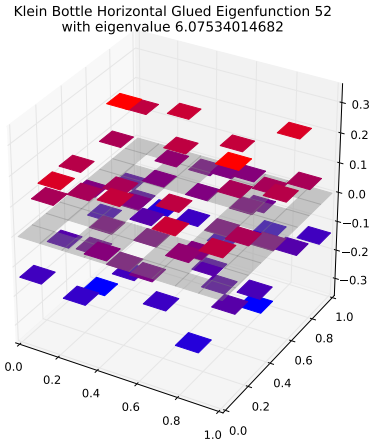
123 $M = 3$ Eigenfunction 122

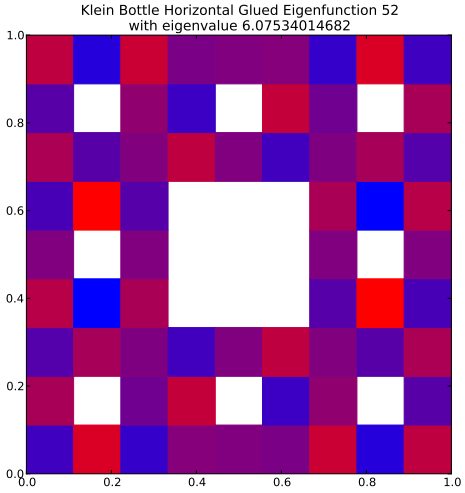
$M = 3$ Eigenfunction 122 has eigenvalue 2.2794192474





Compare to $m = 2$ eigenspace with eigenvalue 6.07534014682

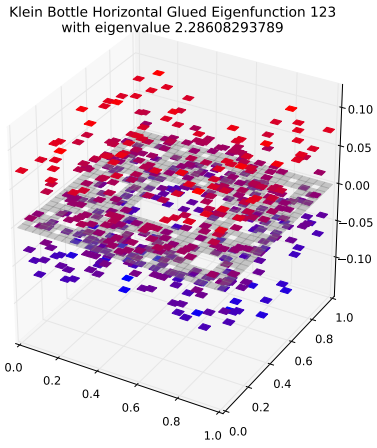


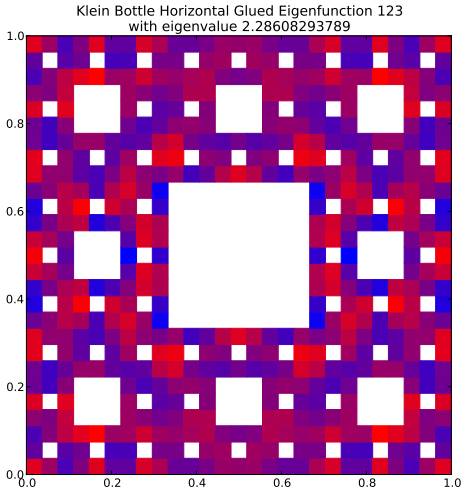


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.37519203737$
Dot Value: 0.5294219860945326

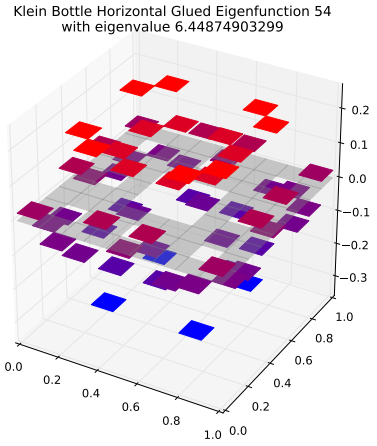
124 $M = 3$ Eigenfunction 123

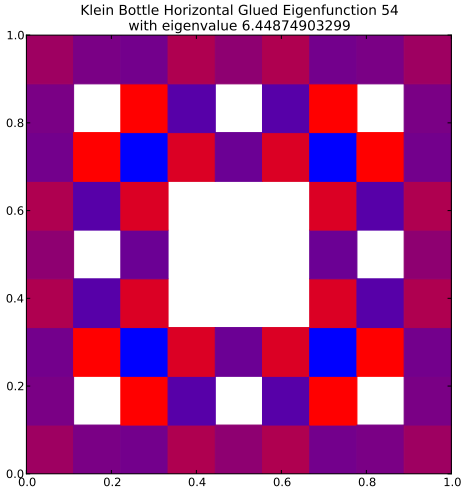
$M = 3$ Eigenfunction 123 has eigenvalue 2.28608293789





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

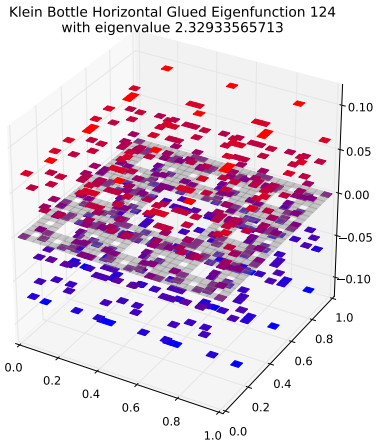


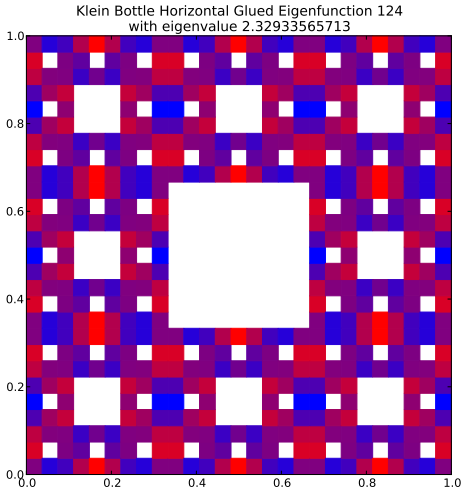


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.35450021798$
Dot Value: 0.3322033675994438

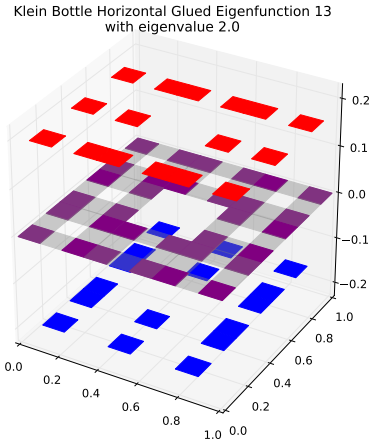
125 $M = 3$ Eigenfunction 124

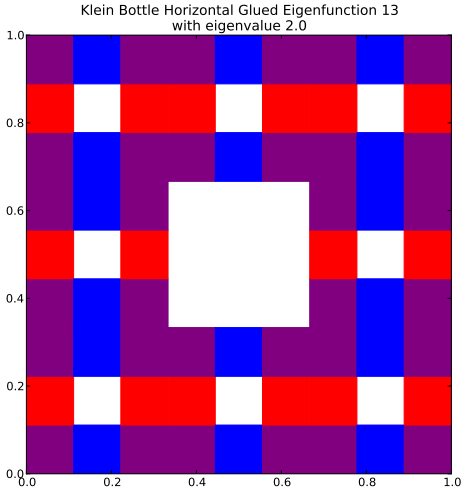
$M = 3$ Eigenfunction 124 has eigenvalue 2.32933565713





Compare to $m = 2$ eigenspace with eigenvalue 2.0

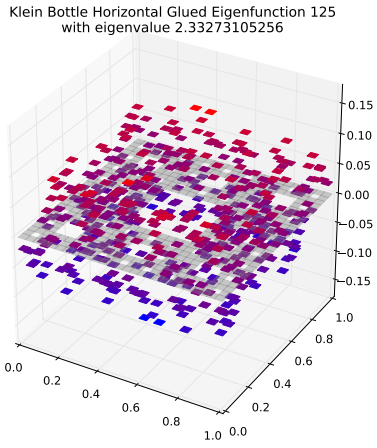


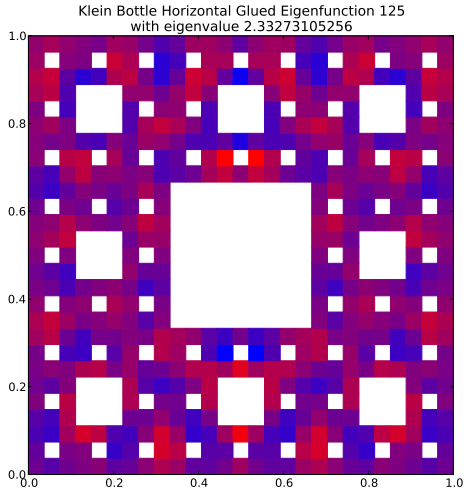


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 1.16466782857$
Dot Value: 1.1102230246251565e-16

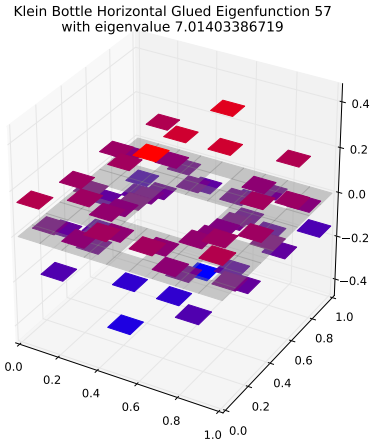
126 $M = 3$ Eigenfunction 125

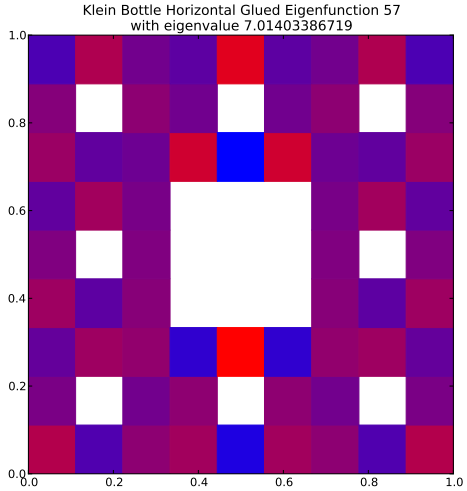
$M = 3$ Eigenfunction 125 has eigenvalue 2.33273105256





Compare to $m = 2$ eigenspace with eigenvalue 7.01403386719

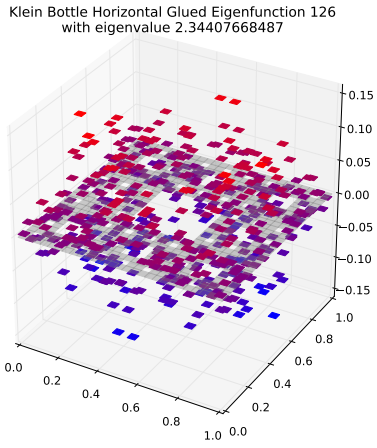


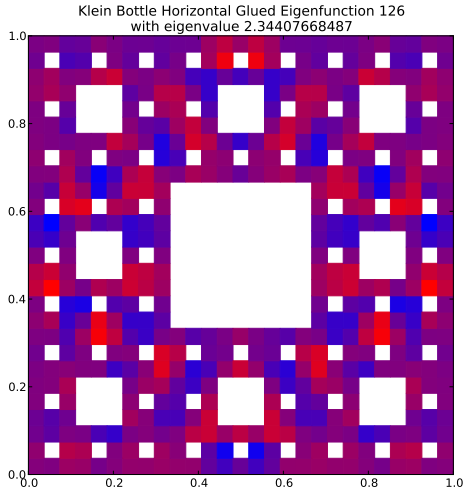


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.332580523095$
Dot Value: 0.37247301262776855

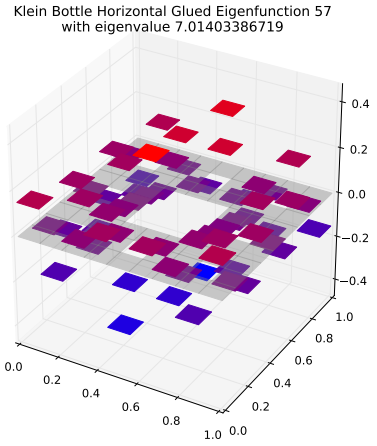
127 $M = 3$ Eigenfunction 126

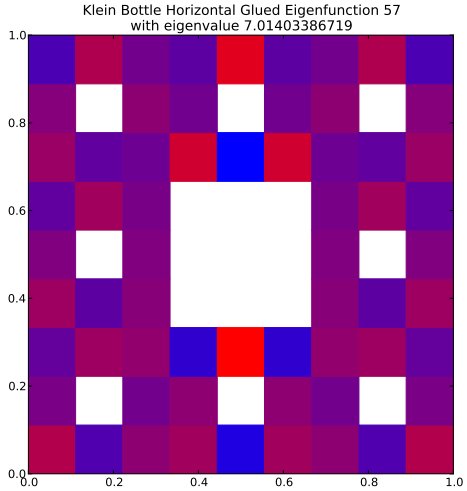
$M = 3$ Eigenfunction 126 has eigenvalue 2.34407668487





Compare to $m = 2$ eigenspace with eigenvalue 7.01403386719

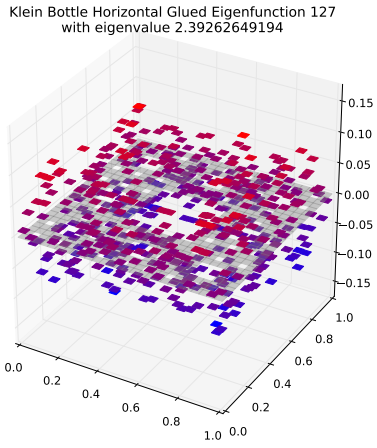


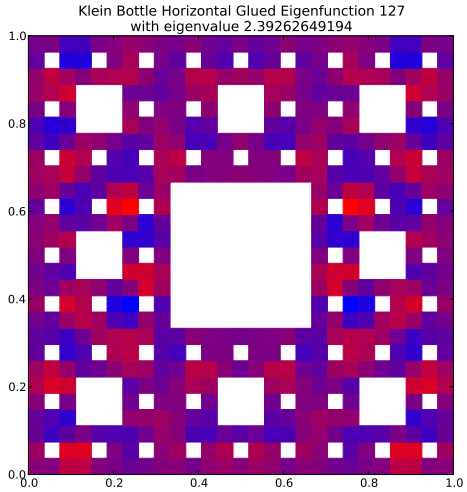


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.334198084762$
Dot Value: 0.2510433393000855

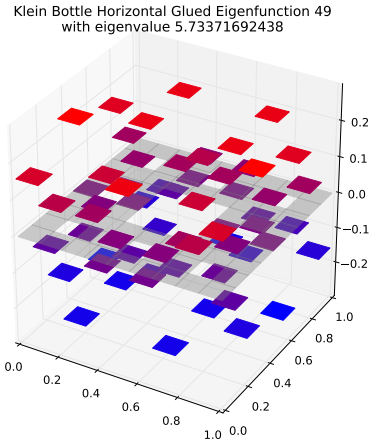
128 $M = 3$ Eigenfunction 127

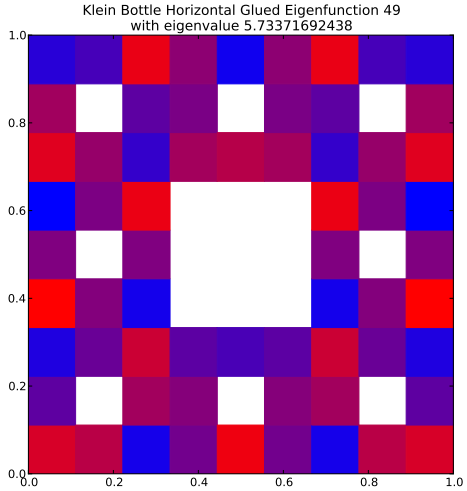
$M = 3$ Eigenfunction 127 has eigenvalue 2.39262649194





Compare to $m = 2$ eigenspace with eigenvalue 5.73371692438

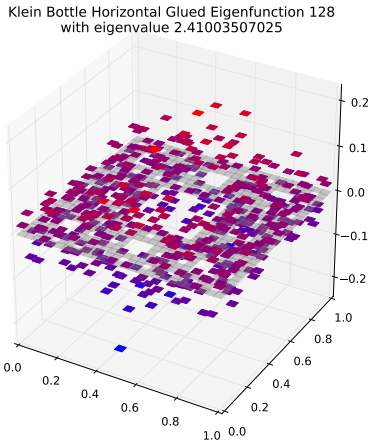


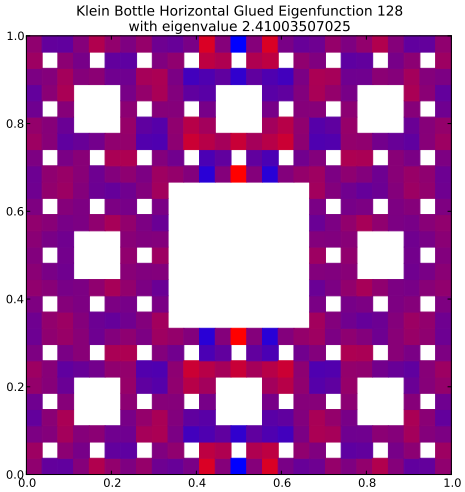


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.417290655171$
Dot Value: 0.12385086320486172

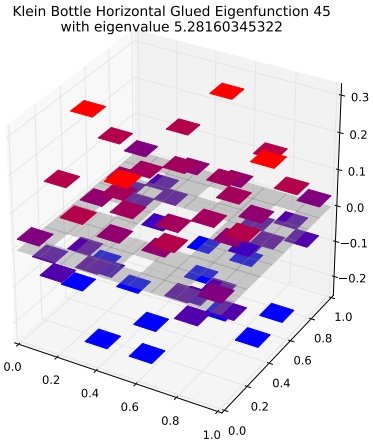
129 $M = 3$ Eigenfunction 128

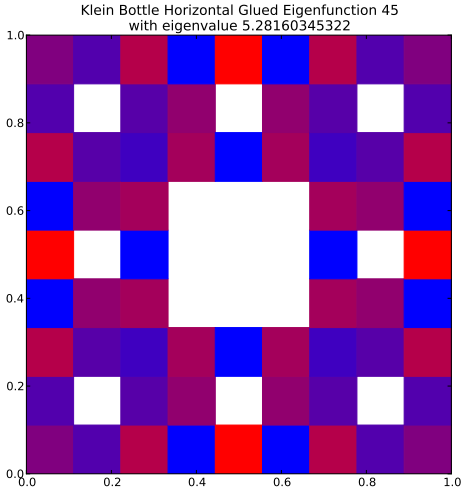
$M = 3$ Eigenfunction 128 has eigenvalue 2.41003507025





Compare to $m = 2$ eigenspace with eigenvalue 5.28160345322

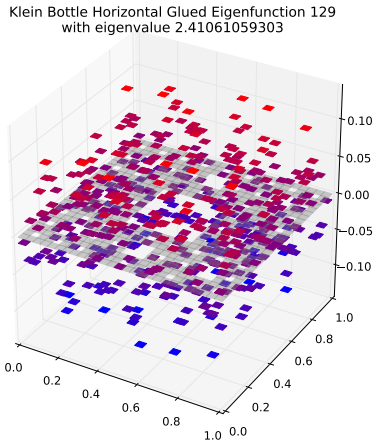


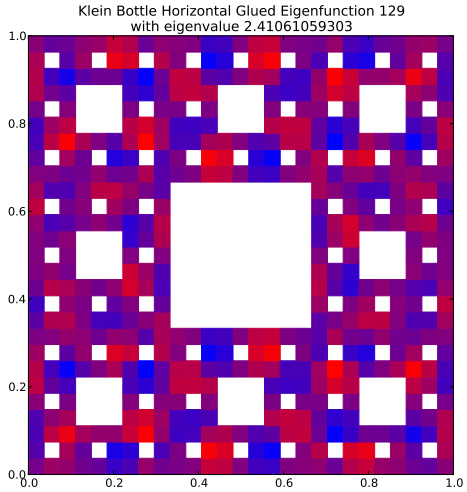


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.45630746261$
Dot Value: 0.3946890653005306

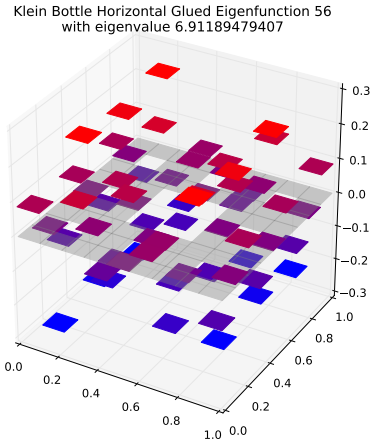
130 $M = 3$ Eigenfunction 129

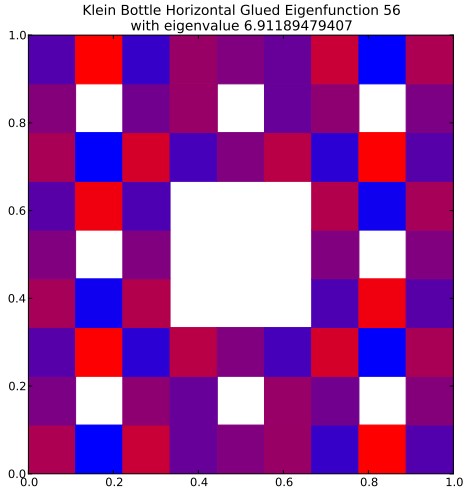
$M = 3$ Eigenfunction 129 has eigenvalue 2.41061059303





Compare to $m = 2$ eigenspace with eigenvalue 6.91189479407

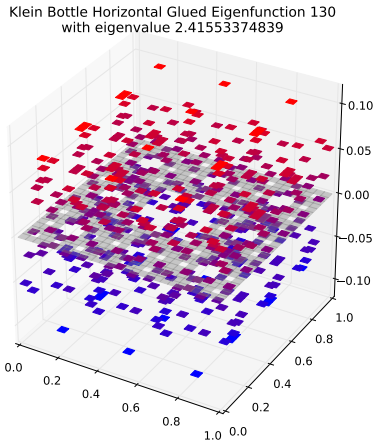


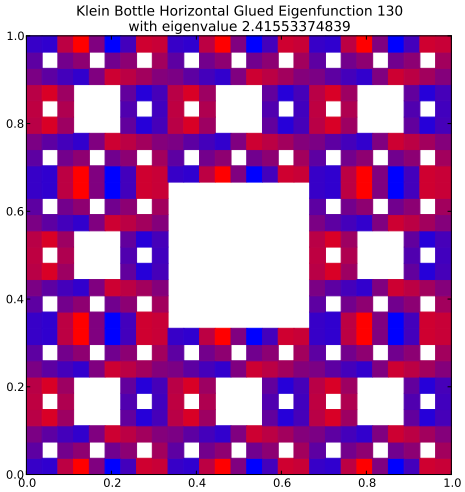


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.348762628027$
Dot Value: 0.2551095289678029

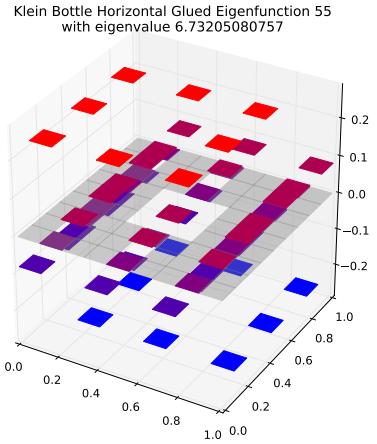
131 $M = 3$ Eigenfunction 130

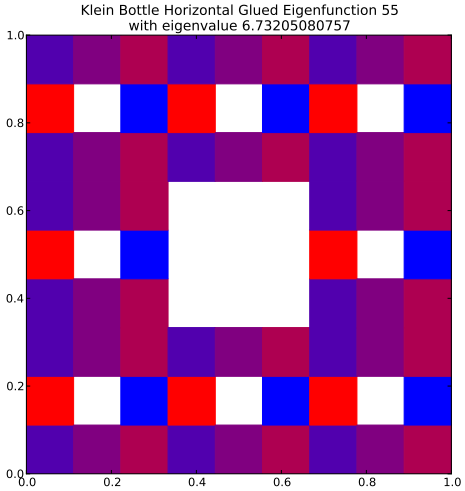
$M = 3$ Eigenfunction 130 has eigenvalue 2.41553374839





Compare to $m = 2$ eigenspace with eigenvalue 6.73205080757

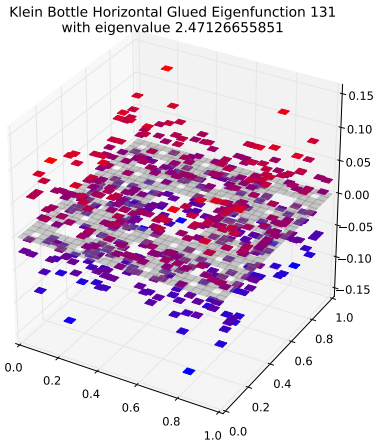


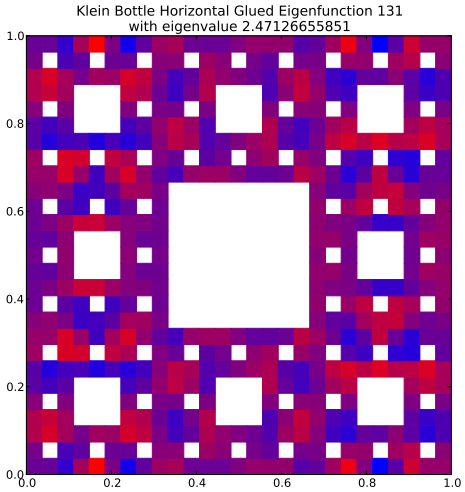


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.358810980106$
Dot Value: 0.011440672902887639

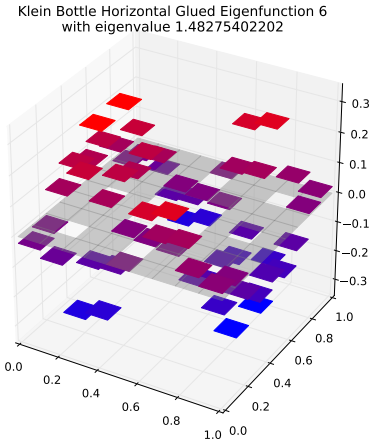
132 $M = 3$ Eigenfunction 131

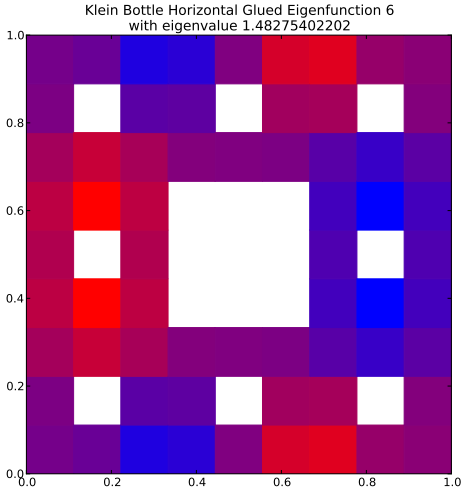
$M = 3$ Eigenfunction 131 has eigenvalue 2.47126655851





Compare to $m = 2$ eigenspace with eigenvalue 1.48275402202

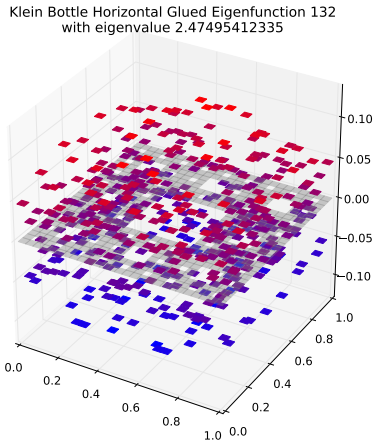


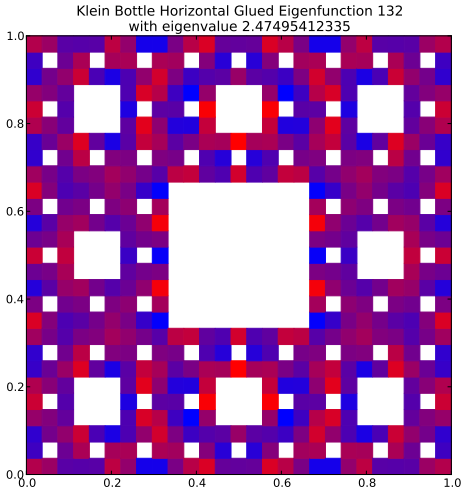


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 1.66667331317$
Dot Value: 0.4789538942939531

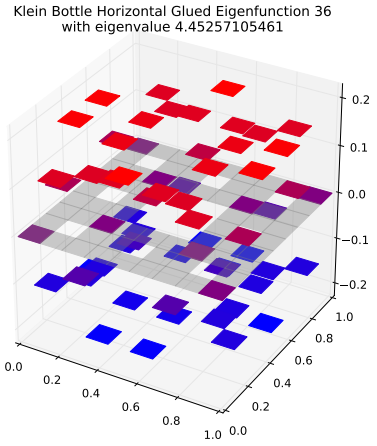
133 $M = 3$ Eigenfunction 132

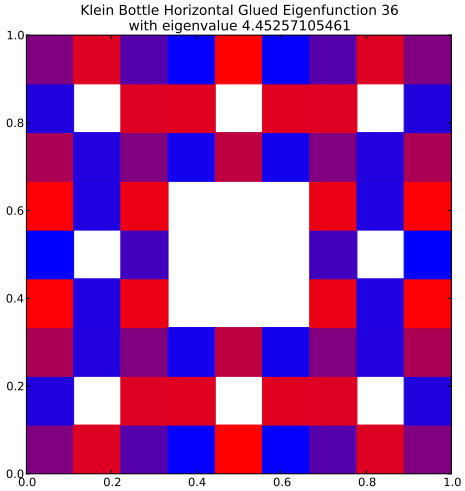
$M = 3$ Eigenfunction 132 has eigenvalue 2.47495412335





Compare to $m = 2$ eigenspace with eigenvalue 4.45257105461

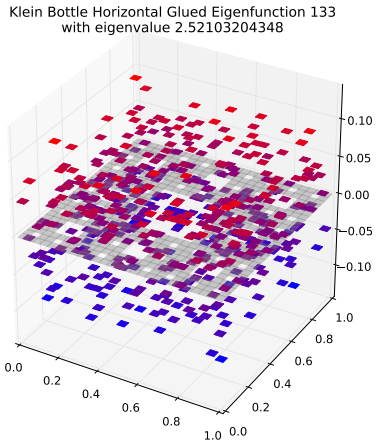


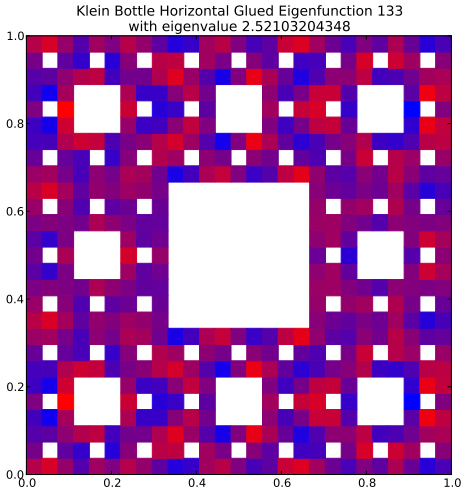


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.555848316175$
Dot Value: 0.5220985892896857

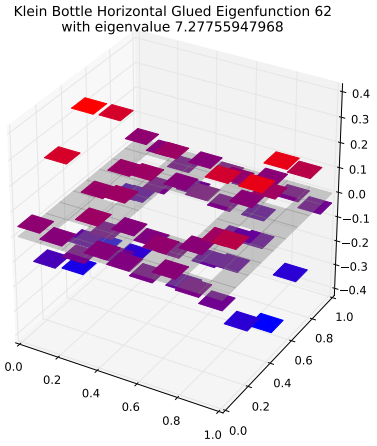
134 $M = 3$ Eigenfunction 133

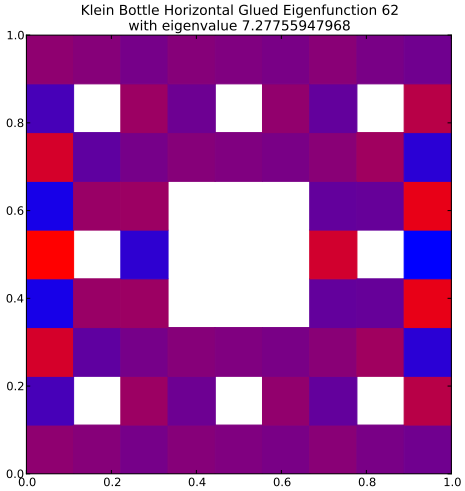
$M = 3$ Eigenfunction 133 has eigenvalue 2.52103204348





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

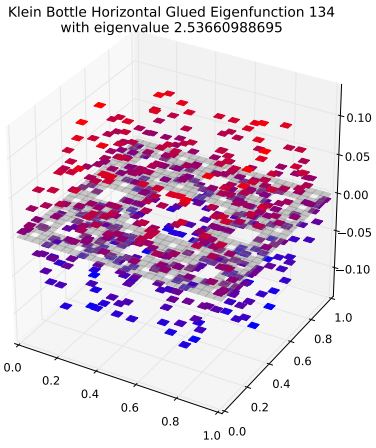


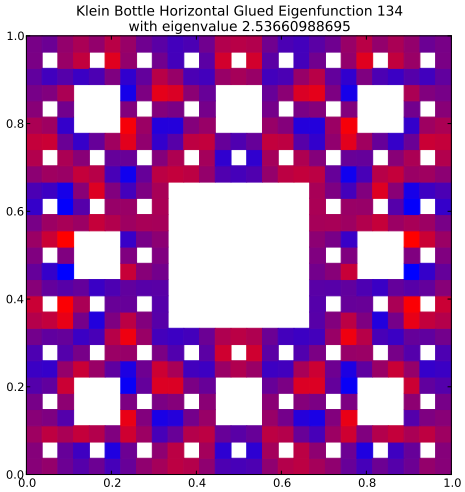


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.346411740161$
Dot Value: 0.46807199559314705

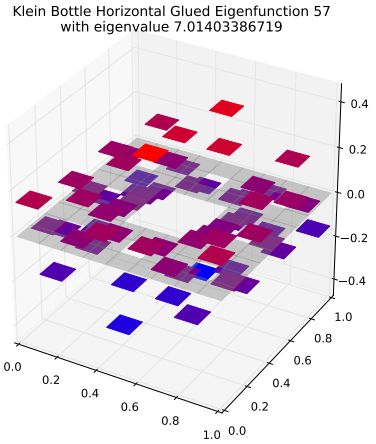
135 $M = 3$ Eigenfunction 134

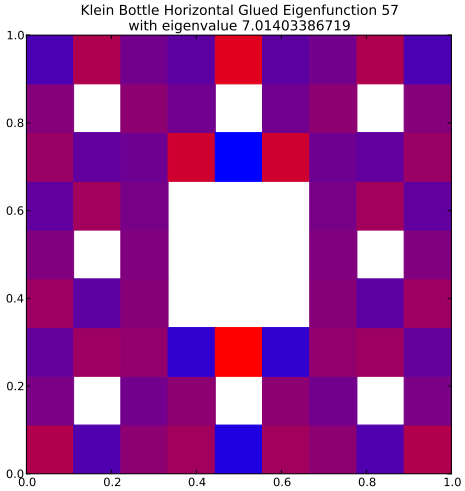
$M = 3$ Eigenfunction 134 has eigenvalue 2.53660988695





Compare to $m = 2$ eigenspace with eigenvalue 7.01403386719

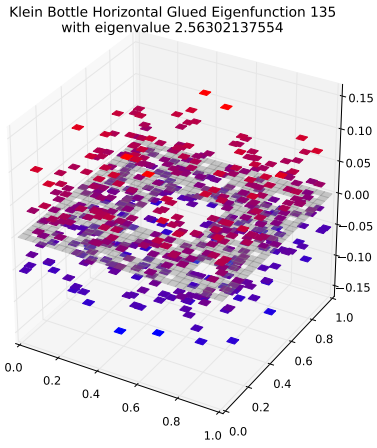


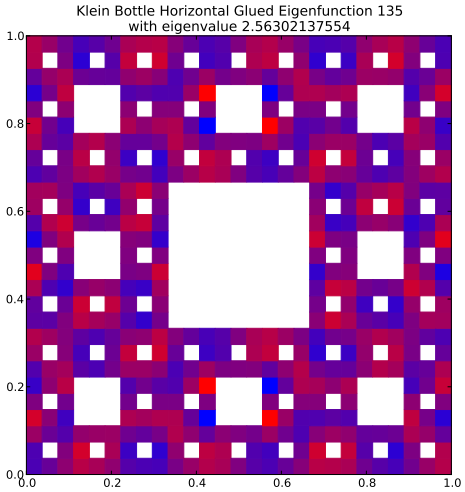


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.361647795688$
Dot Value: 0.1430173019390647

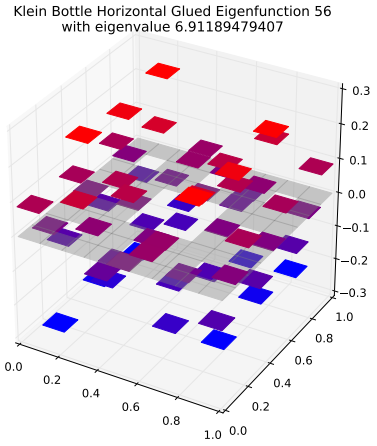
136 $M = 3$ Eigenfunction 135

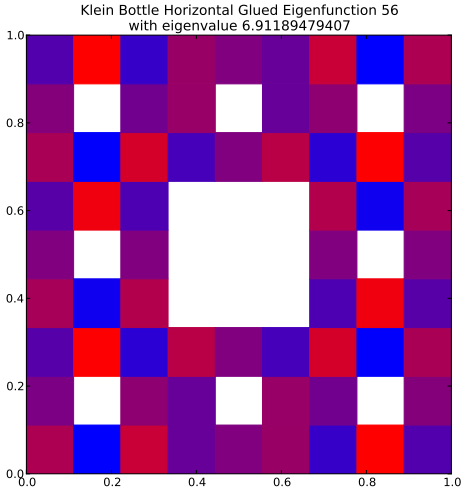
$M = 3$ Eigenfunction 135 has eigenvalue 2.56302137554





Compare to $m = 2$ eigenspace with eigenvalue 6.91189479407

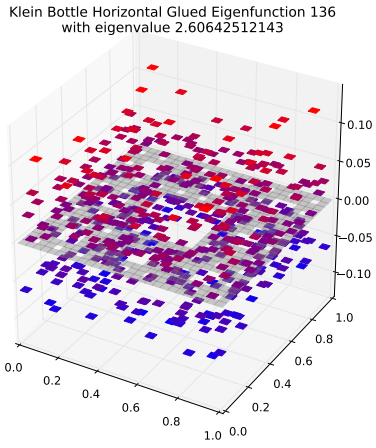


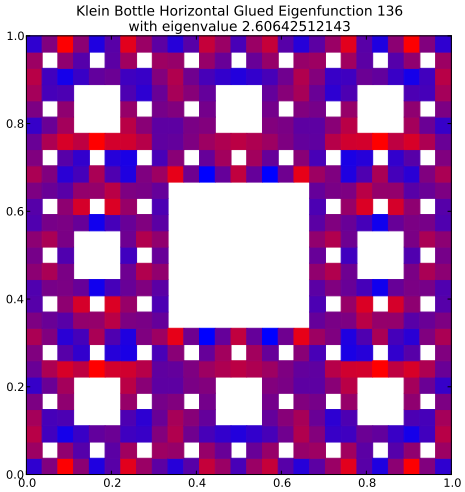


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.370813134734$
Dot Value: 0.0526000656521749

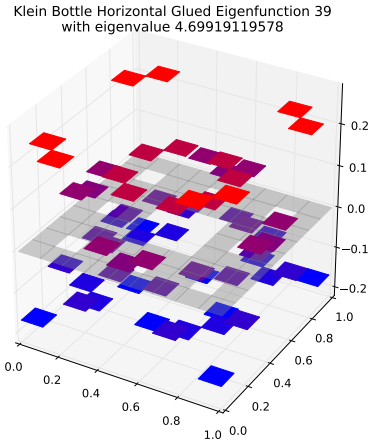
137 $M = 3$ Eigenfunction 136

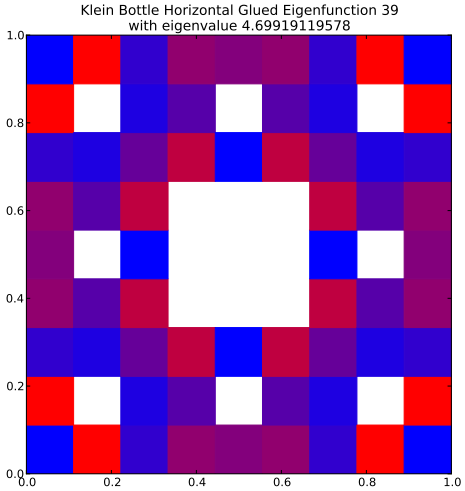
$M = 3$ Eigenfunction 136 has eigenvalue 2.60642512143





Compare to $m = 2$ eigenspace with eigenvalue 4.69919119578

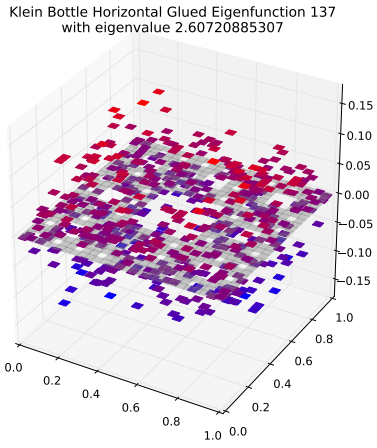


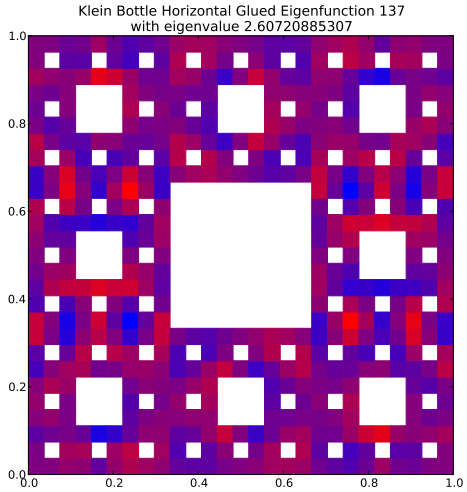


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.554653984662$
Dot Value: 0.35084014041006273

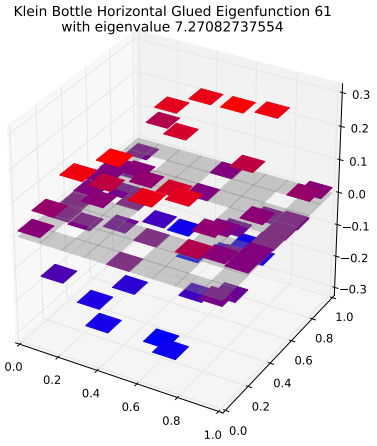
138 $M = 3$ Eigenfunction 137

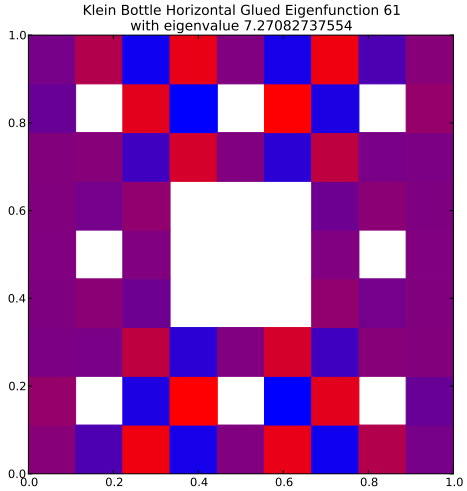
$M = 3$ Eigenfunction 137 has eigenvalue 2.60720885307





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

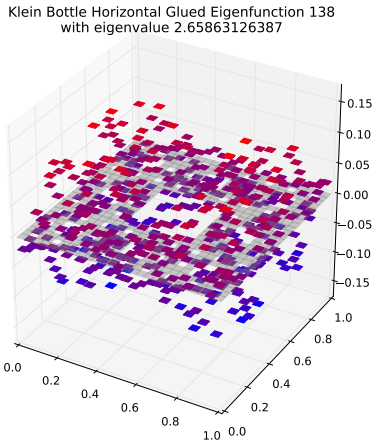


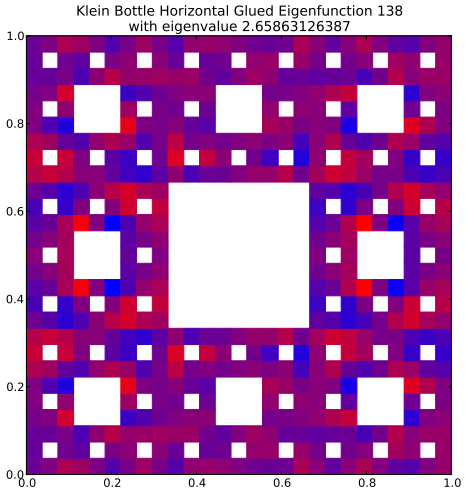


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.358584892531$
Dot Value: 0.25406226619885486

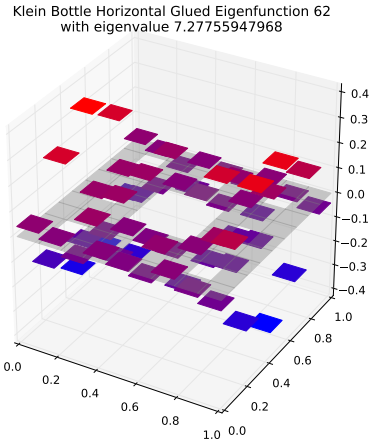
139 $M = 3$ Eigenfunction 138

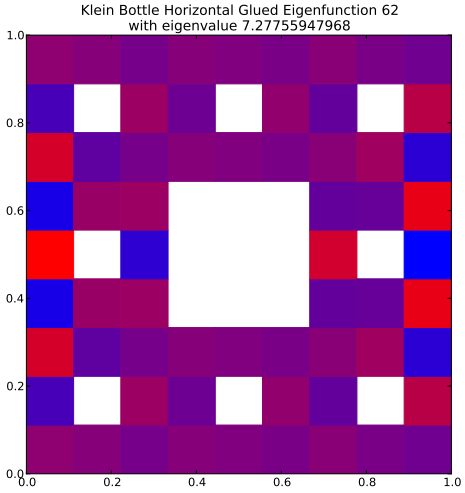
$M = 3$ Eigenfunction 138 has eigenvalue 2.65863126387





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968

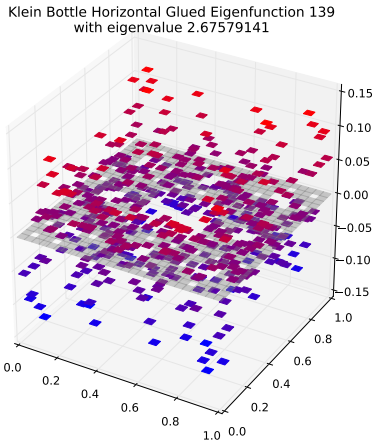


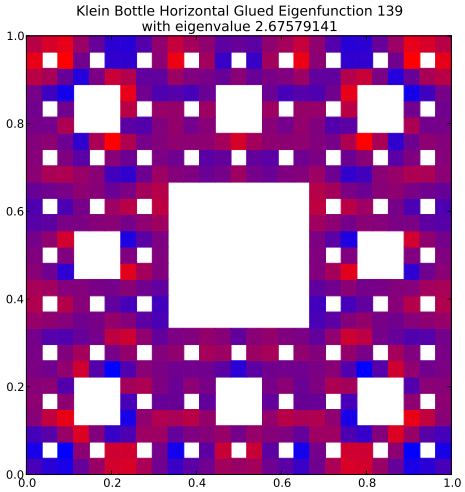


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.365319070396$
Dot Value: 0.3340349438377168

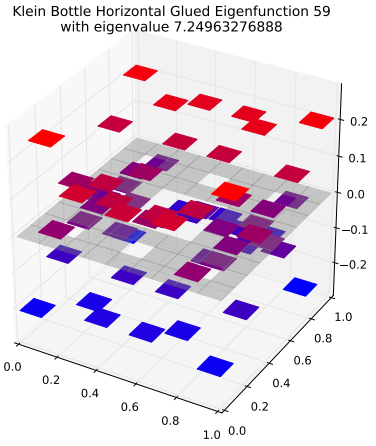
140 $M = 3$ Eigenfunction 139

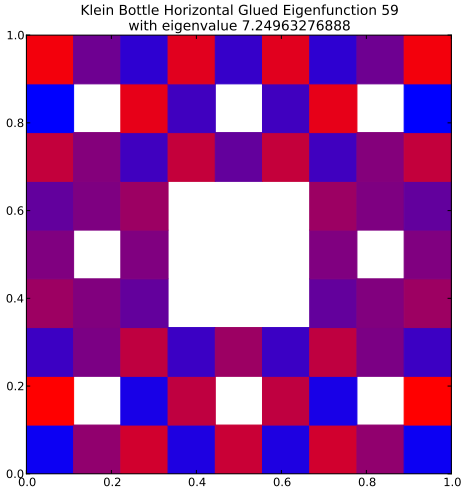
$M = 3$ Eigenfunction 139 has eigenvalue 2.67579141





Compare to $m = 2$ eigenspace with eigenvalue 7.24963276888

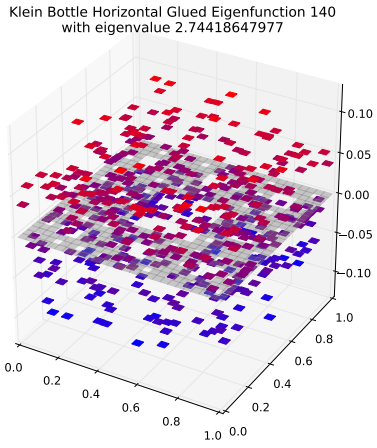


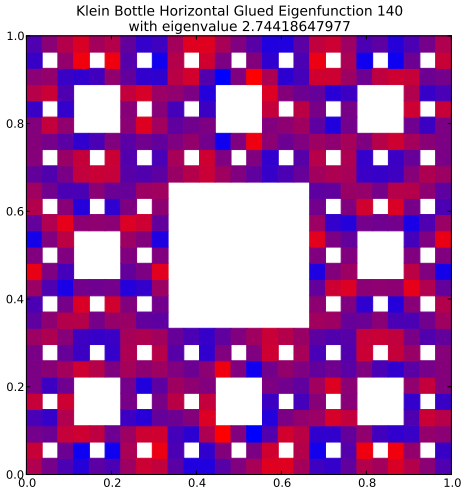


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.369093372769$
Dot Value: 0.25104058339701396

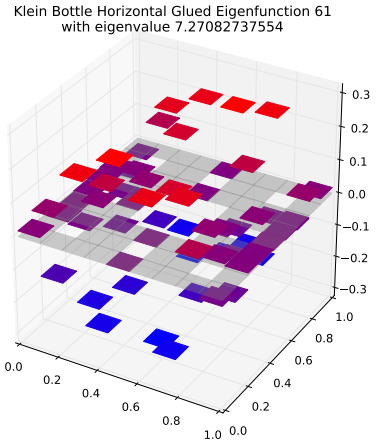
141 $M = 3$ Eigenfunction 140

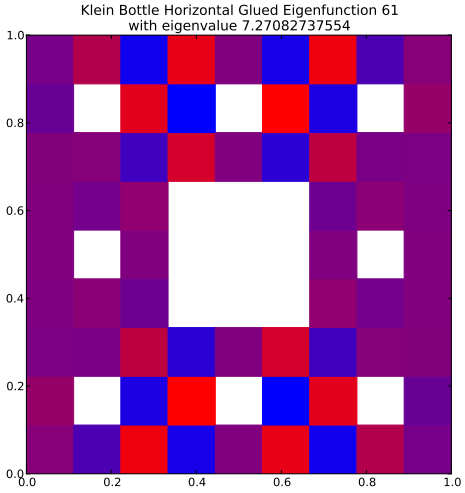
$M = 3$ Eigenfunction 140 has eigenvalue 2.74418647977





Compare to $m = 2$ eigenspace with eigenvalue 7.27082737554

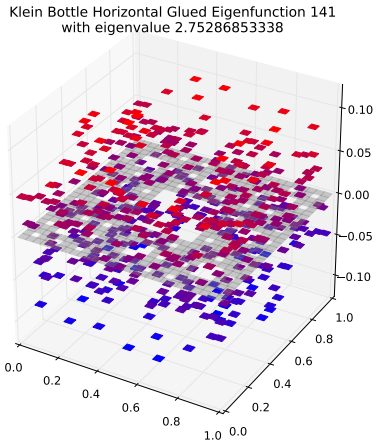


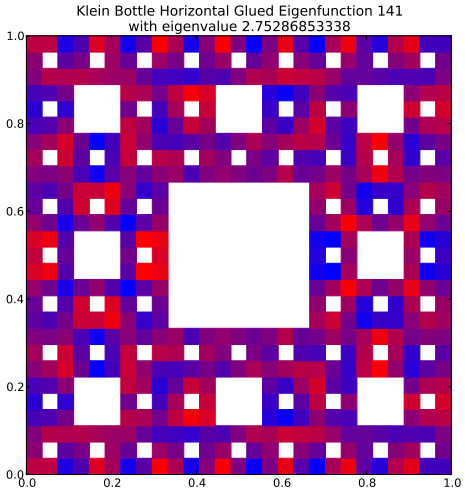


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.377424237714$
Dot Value: 0.09808883394953816

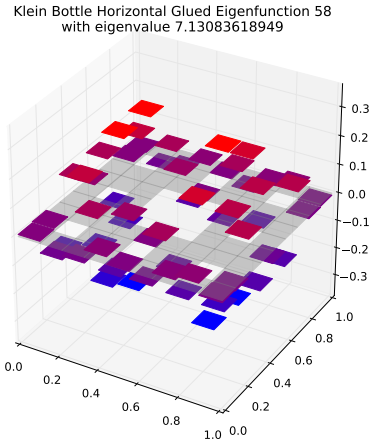
142 $M = 3$ Eigenfunction 141

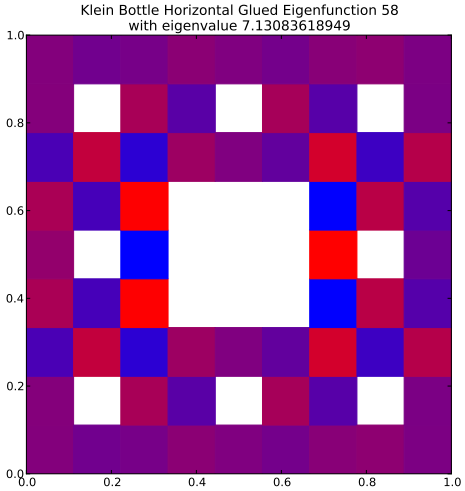
$M = 3$ Eigenfunction 141 has eigenvalue 2.75286853338





Compare to $m = 2$ eigenspace with eigenvalue 7.13083618949

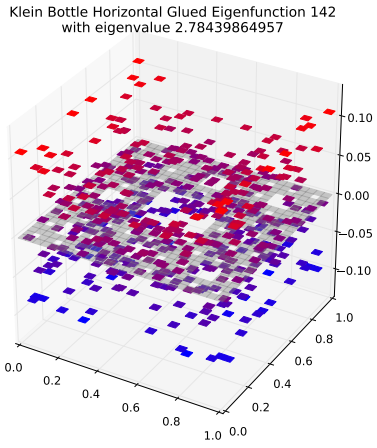


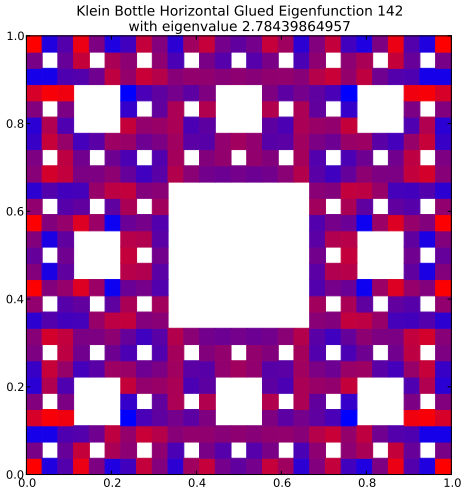


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.386051293316$
Dot Value: 0.27497284663653754

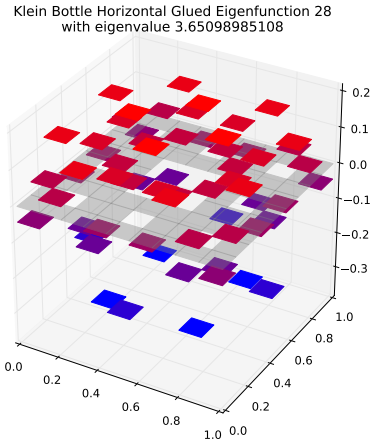
143 $M = 3$ Eigenfunction 142

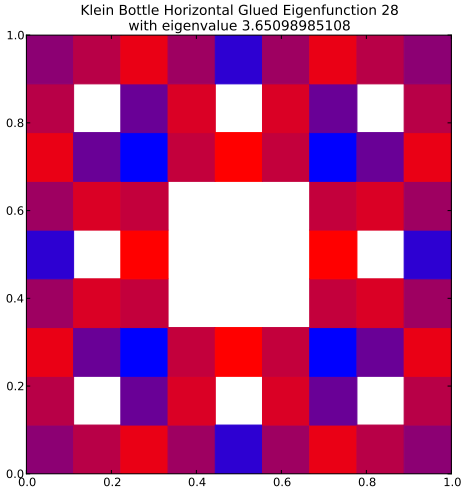
$M = 3$ Eigenfunction 142 has eigenvalue 2.78439864957





Compare to $m = 2$ eigenspace with eigenvalue 3.65098985108

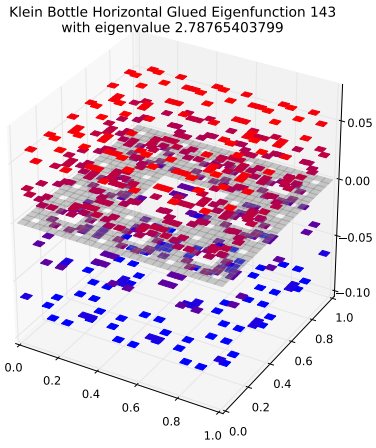


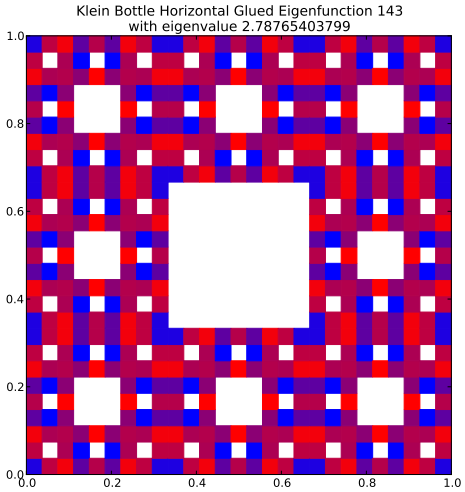


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.762642122586$
Dot Value: 0.2487592287138587

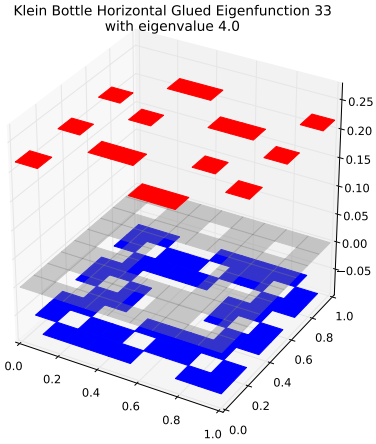
144 $M = 3$ Eigenfunction 143

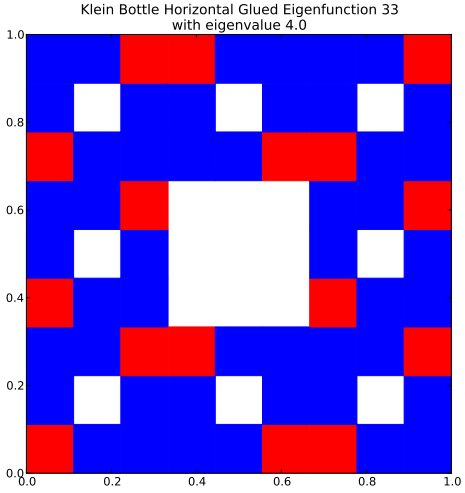
$M = 3$ Eigenfunction 143 has eigenvalue 2.78765403799





Compare to $m = 2$ eigenspace with eigenvalue 4.0
(Note: Eigenspace Dimension > 1)

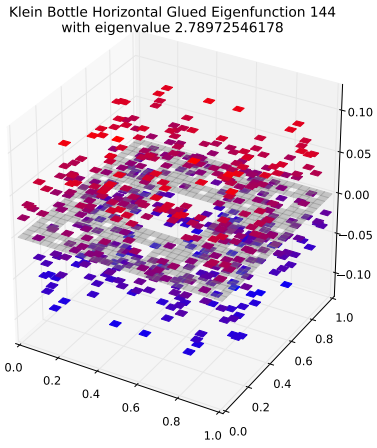


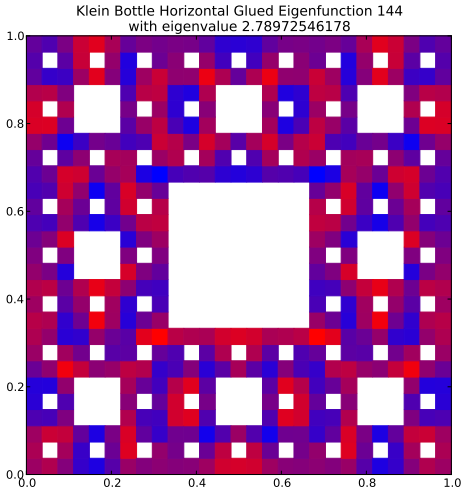


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.696913509497$
Dot Value: 1.1102230246251565e-16

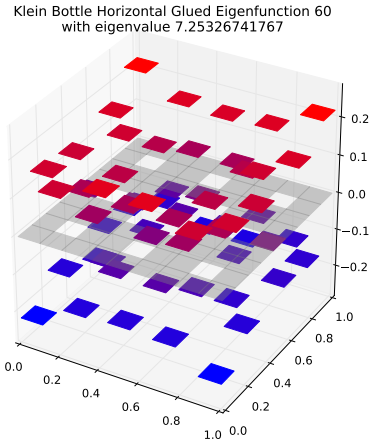
145 $M = 3$ Eigenfunction 144

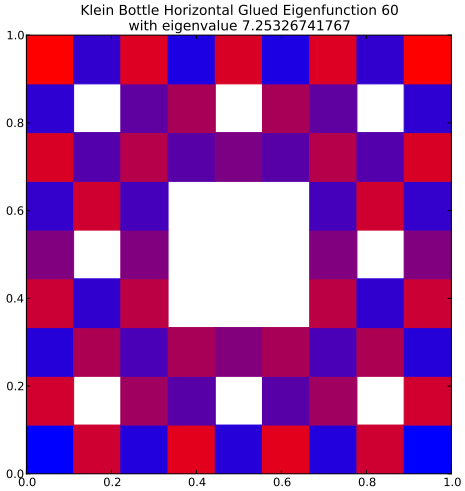
$M = 3$ Eigenfunction 144 has eigenvalue 2.78972546178





Compare to $m = 2$ eigenspace with eigenvalue 7.25326741767

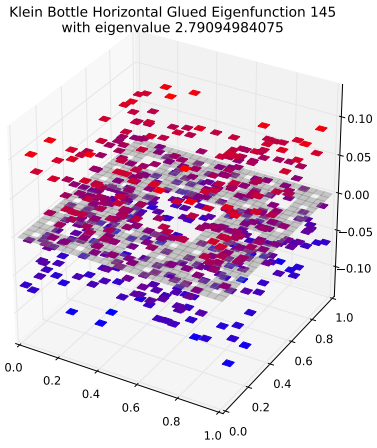


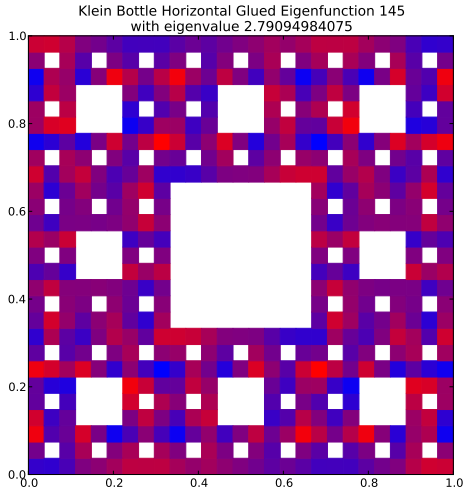


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.384616380609$
Dot Value: 0.20904162213424915

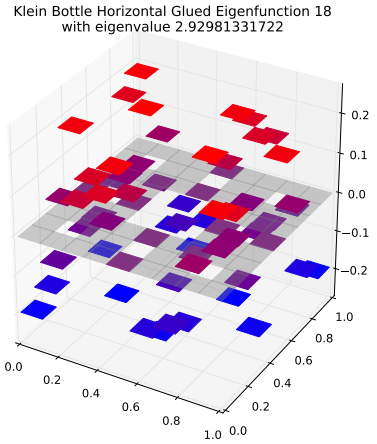
146 $M = 3$ Eigenfunction 145

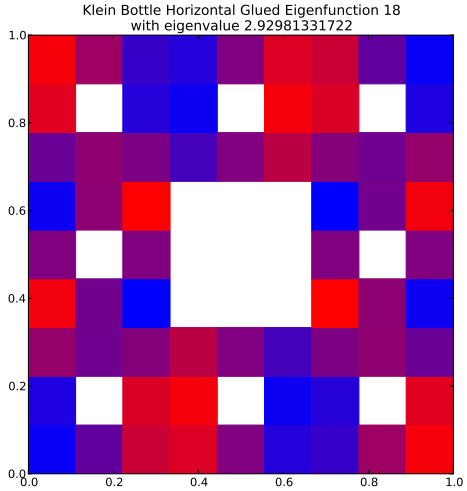
$M = 3$ Eigenfunction 145 has eigenvalue 2.79094984075





Compare to $m = 2$ eigenspace with eigenvalue 2.92981331722

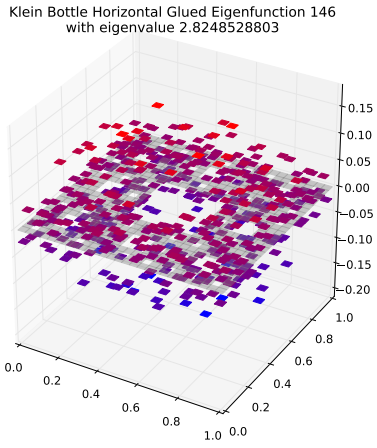


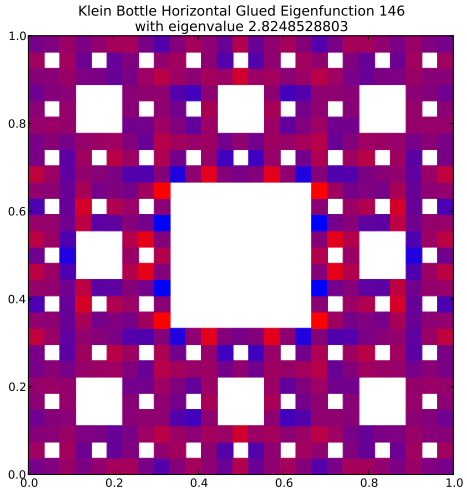


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.952603302179$
Dot Value: 0.13753054338875959

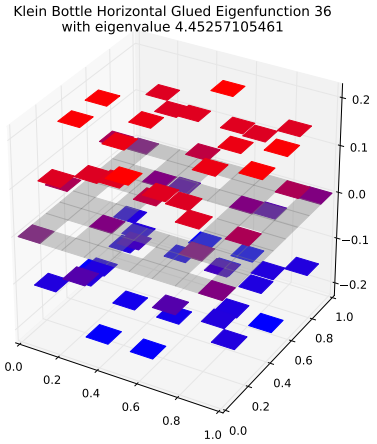
147 $M = 3$ Eigenfunction 146

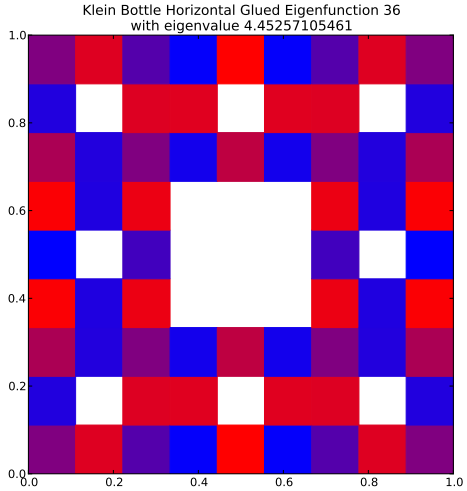
$M = 3$ Eigenfunction 146 has eigenvalue 2.8248528803





Compare to $m = 2$ eigenspace with eigenvalue 4.45257105461

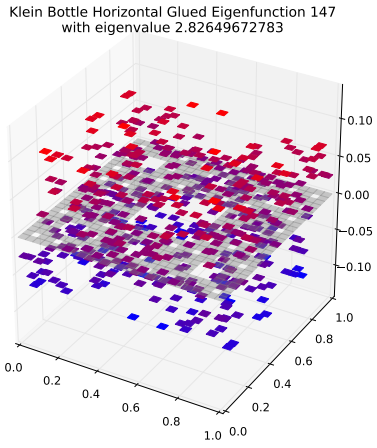


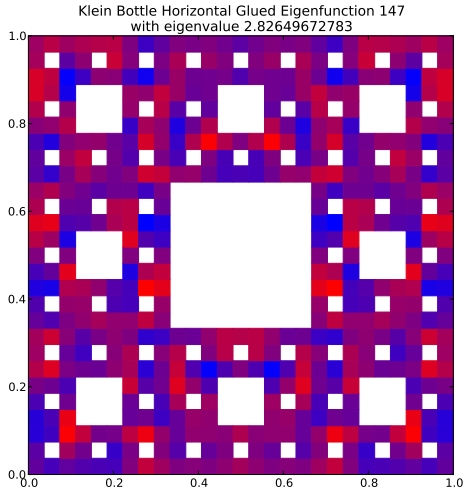


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.634431847501$
Dot Value: 0.3721420507782657

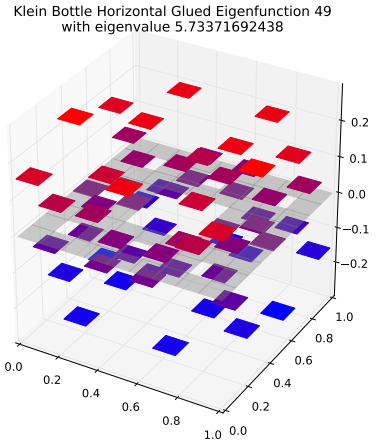
148 $M = 3$ Eigenfunction 147

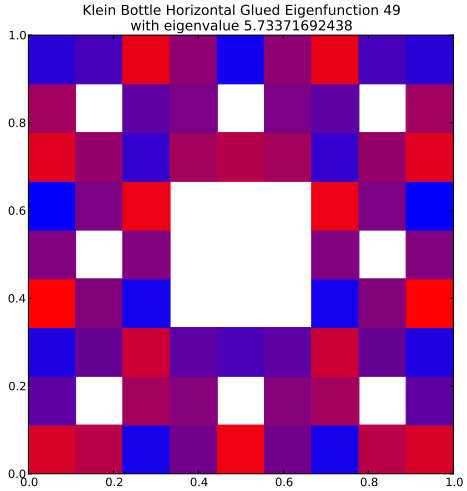
$M = 3$ Eigenfunction 147 has eigenvalue 2.82649672783





Compare to $m = 2$ eigenspace with eigenvalue 5.73371692438

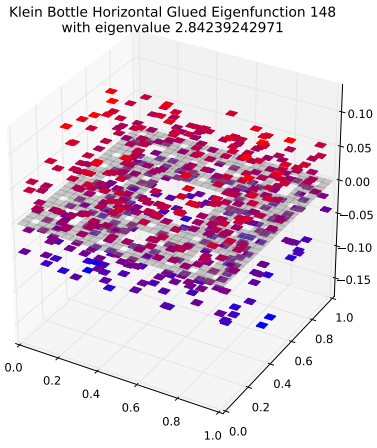


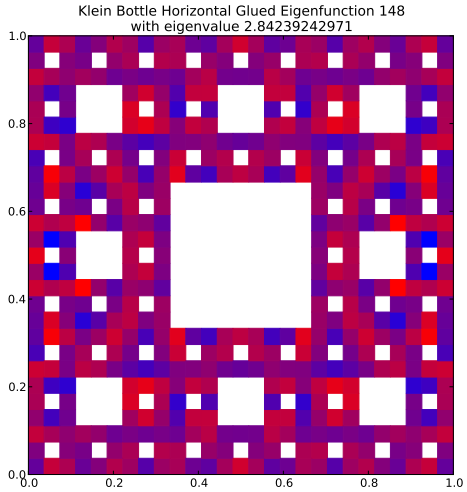


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.492960633583$
Dot Value: 0.2763740700589934

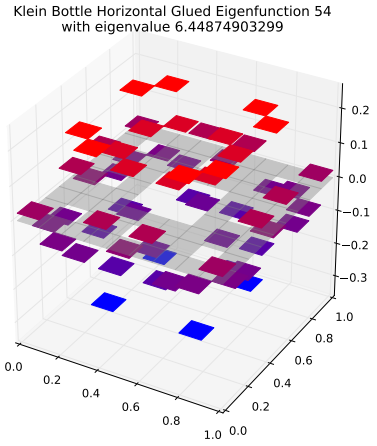
149 $M = 3$ Eigenfunction 148

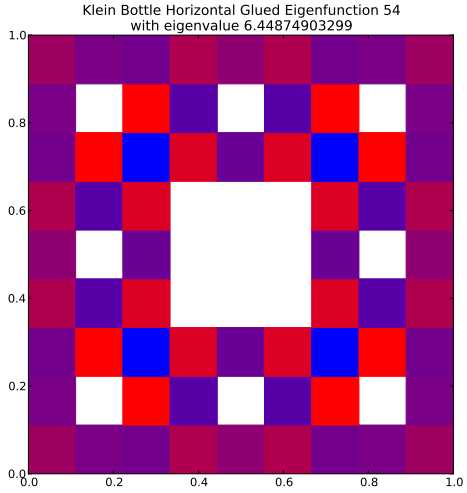
$M = 3$ Eigenfunction 148 has eigenvalue 2.84239242971





Compare to $m = 2$ eigenspace with eigenvalue 6.44874903299

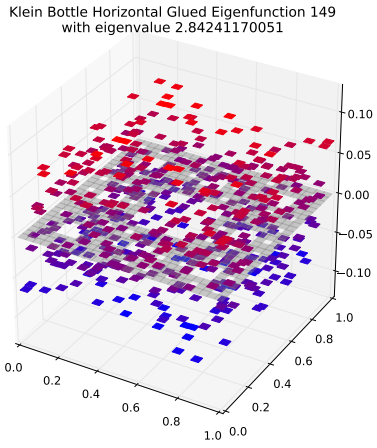


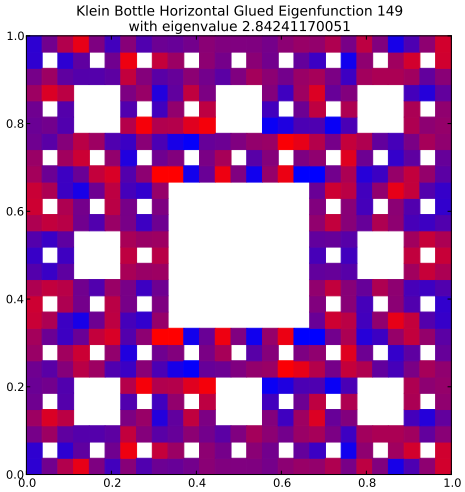


Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.440766482797$
Dot Value: 0.30754421870124726

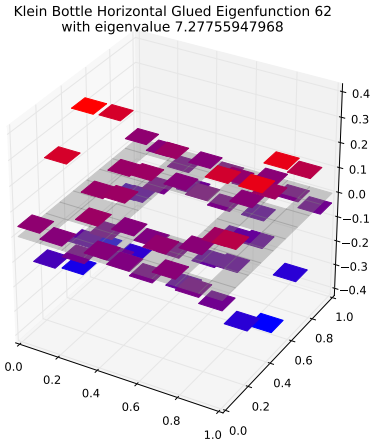
150 $M = 3$ Eigenfunction 149

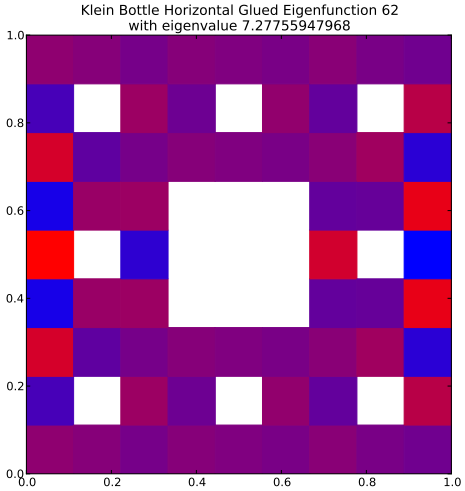
$M = 3$ Eigenfunction 149 has eigenvalue 2.84241170051





Compare to $m = 2$ eigenspace with eigenvalue 7.27755947968





Eigenvalue Ratio: $\lambda_3/\lambda_2 = 0.390572101603$
Dot Value: 0.3178859928073874