

# Projective Plane Glued Comparison of Level 4 Eigenfunctions and Level 3 Eigenfunctions By Averaging (First 150)

SPUR 2016

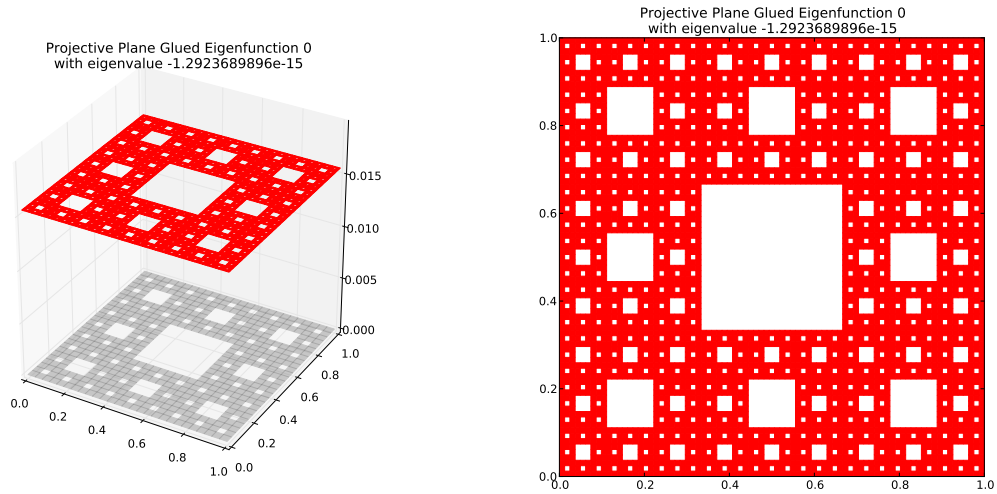
May 23, 2018

## Key to Dot Value

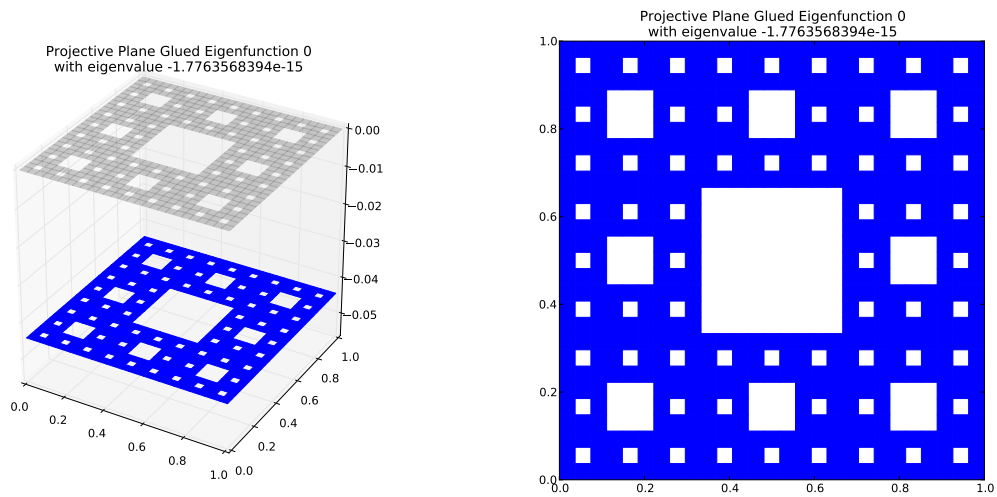
Dot values are in general between 0 and 1; those close to 0 are better matches, while those close to 1 are not good matches. Dot value 2 indicates the eigenvalue averages to the zero function. Dot value 3 indicates the projection onto the closest eigenspace is zero.

# 1 $M = 4$ Eigenfunction 0

$M = 4$  Eigenfunction 0 has eigenvalue  $-8.76902717106e-16$



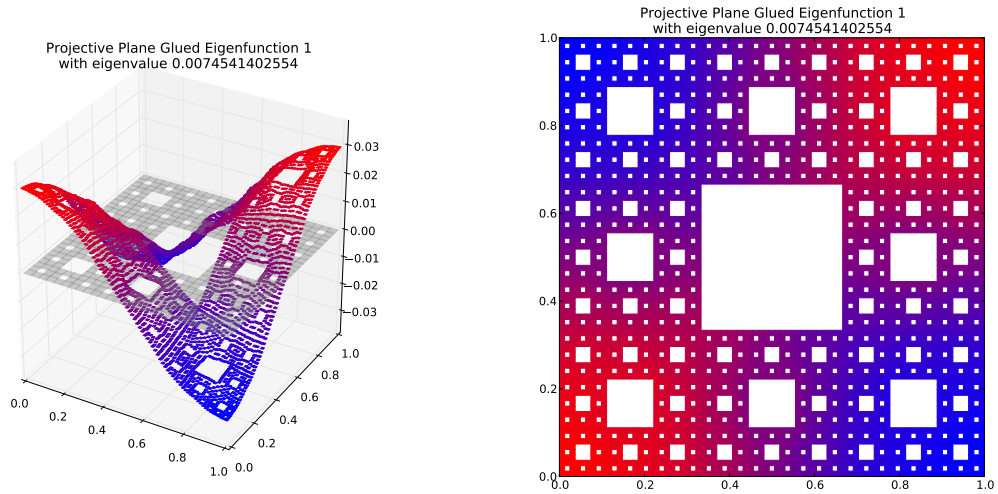
Compare to  $m = 3$  eigenspace with eigenvalue  $-1.7763568394e-15$



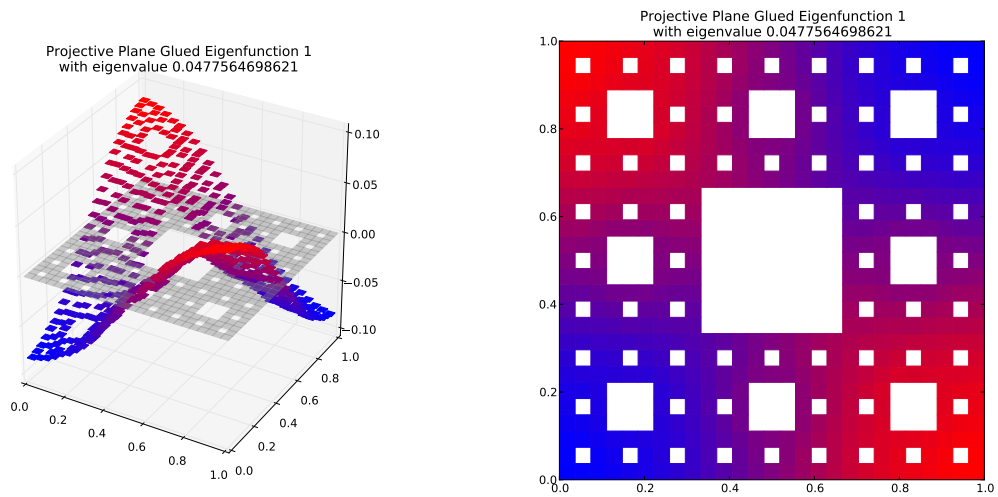
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.49365234375$   
Dot Value:  $2.220446049250313e-16$

## 2 $M = 4$ Eigenfunction 1

$M = 4$  Eigenfunction 1 has eigenvalue 0.0074541402554



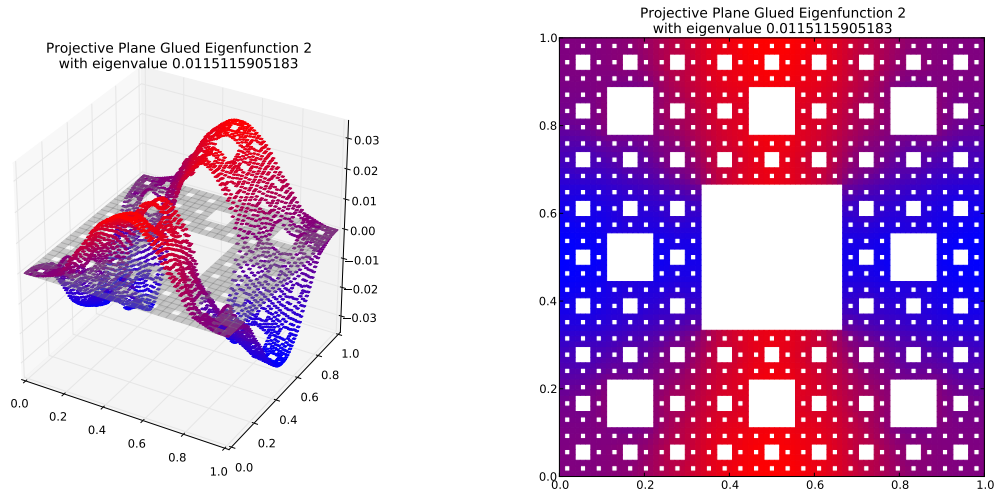
Compare to  $m = 3$  eigenspace with eigenvalue 0.0477564698621



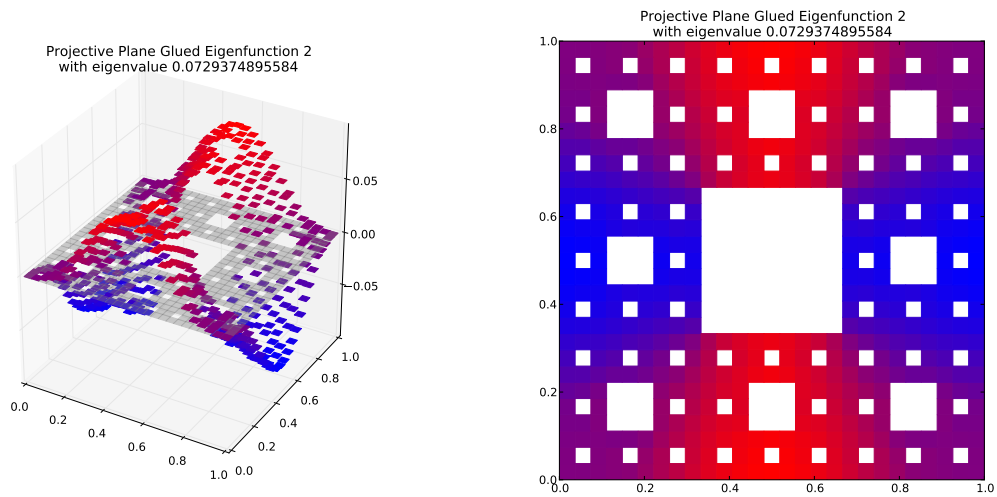
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.156086500467$   
Dot Value: 1.804496179469428e-05

### 3 $M = 4$ Eigenfunction 2

$M = 4$  Eigenfunction 2 has eigenvalue 0.0115115905183



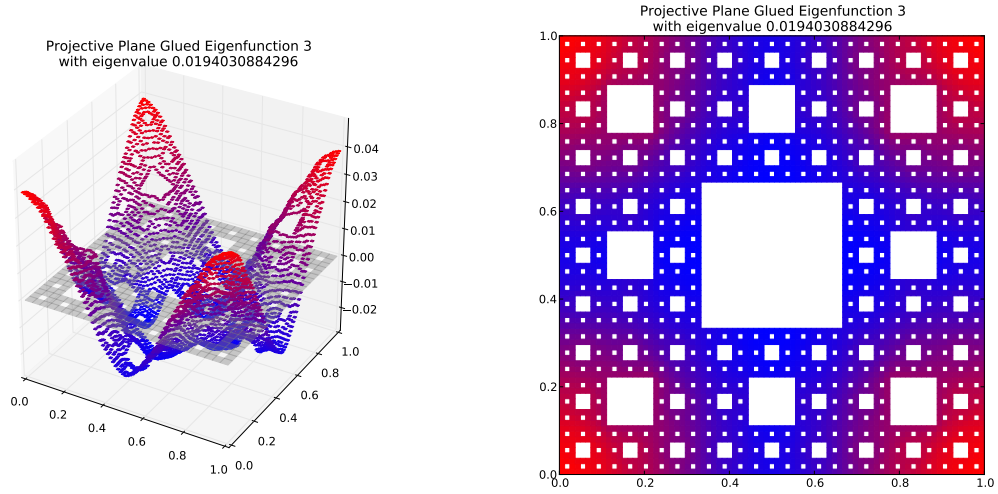
Compare to  $m = 3$  eigenspace with eigenvalue 0.0729374895584



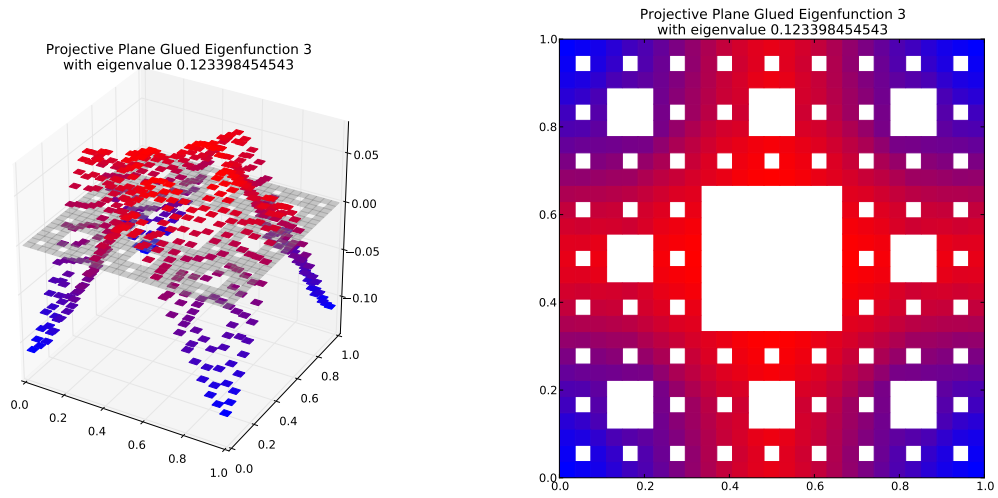
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157828170232$   
Dot Value: 2.7805761335431e-05

## 4 $M = 4$ Eigenfunction 3

$M = 4$  Eigenfunction 3 has eigenvalue 0.0194030884296



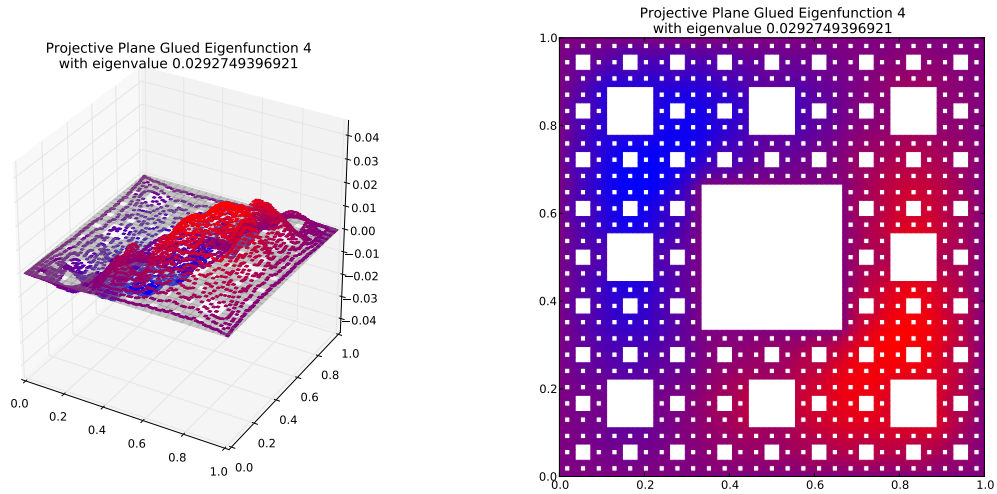
Compare to  $m = 3$  eigenspace with eigenvalue 0.123398454543



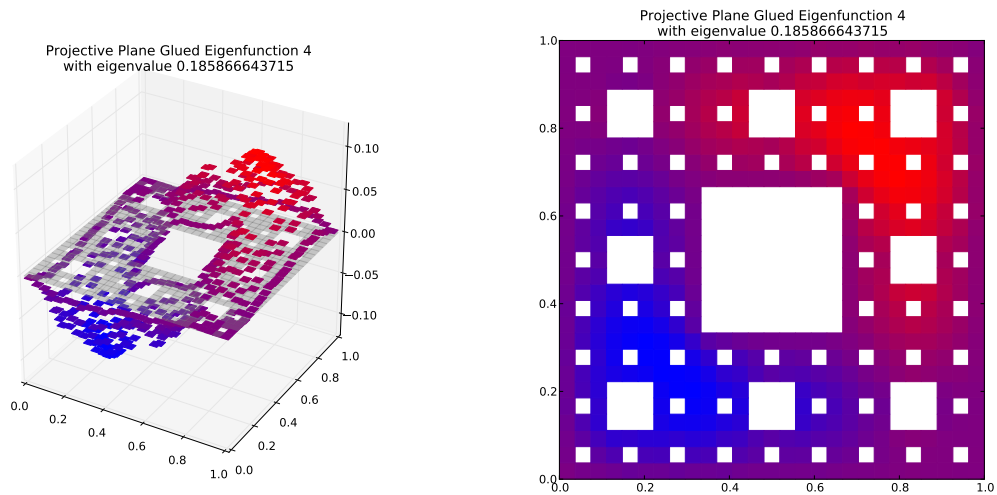
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157239314718$   
Dot Value: 8.46779048758739e-05

## 5 $M = 4$ Eigenfunction 4

$M = 4$  Eigenfunction 4 has eigenvalue 0.0292749396921



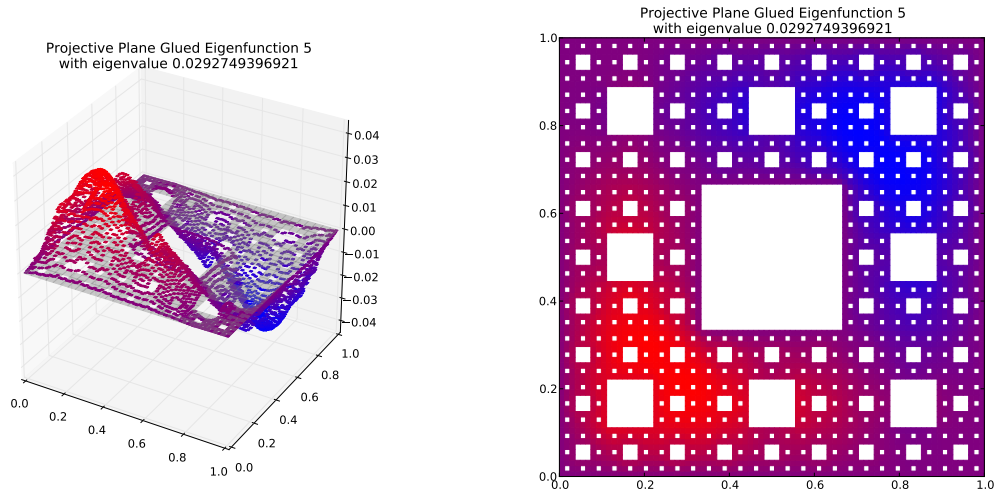
Compare to  $m = 3$  eigenspace with eigenvalue 0.185866643715  
(Note: Eigenspace Dimension  $> 1$ )



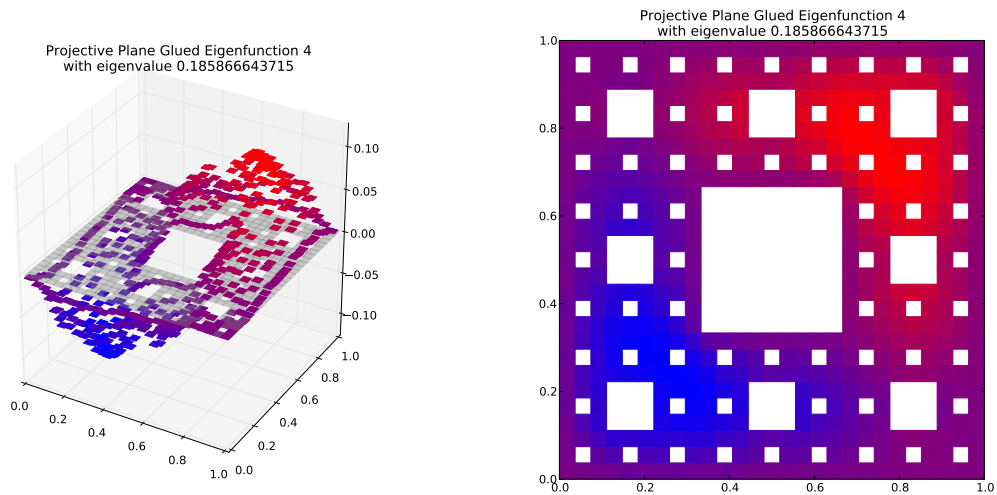
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157505075182$   
Dot Value: 0.00010780718830571967

## 6 $M = 4$ Eigenfunction 5

$M = 4$  Eigenfunction 5 has eigenvalue 0.0292749396921



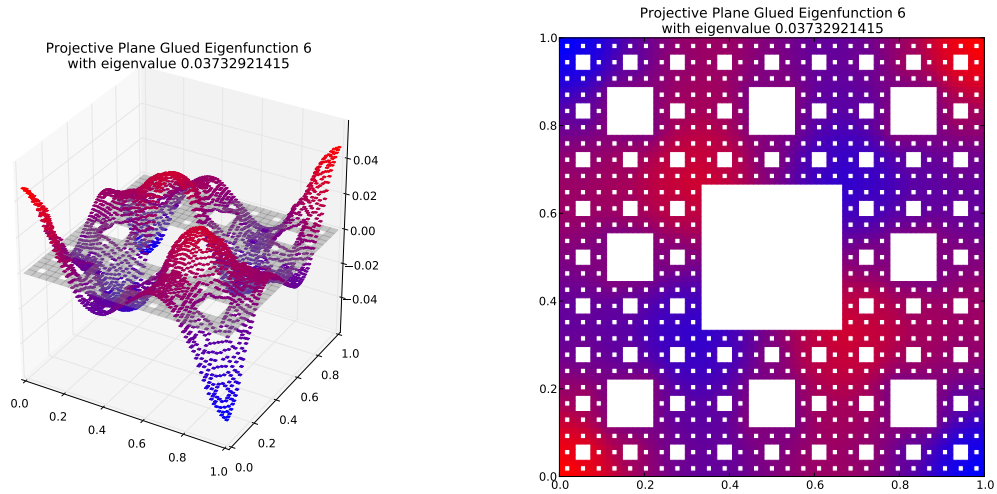
Compare to  $m = 3$  eigenspace with eigenvalue 0.185866643715  
(Note: Eigenspace Dimension  $> 1$ )



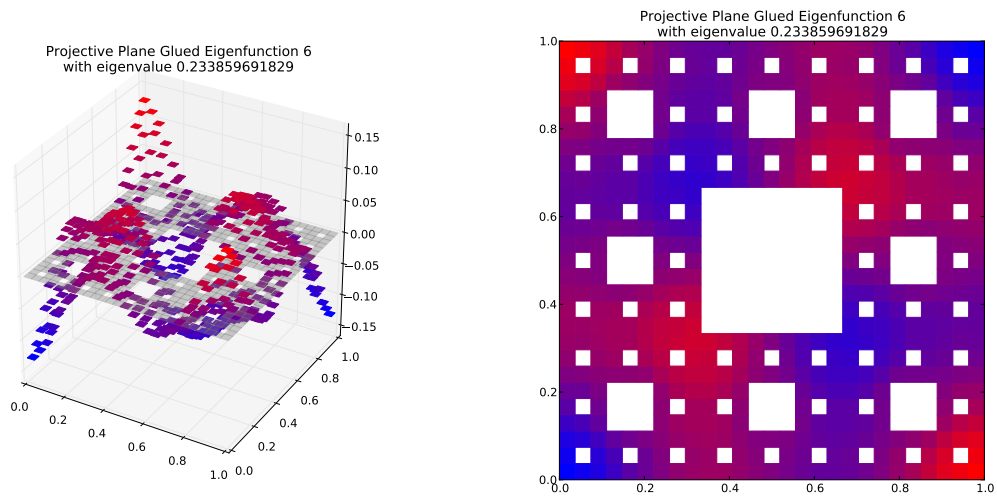
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157505075182$   
Dot Value: 0.00010780718830571967

## 7 $M = 4$ Eigenfunction 6

$M = 4$  Eigenfunction 6 has eigenvalue 0.0373292141501



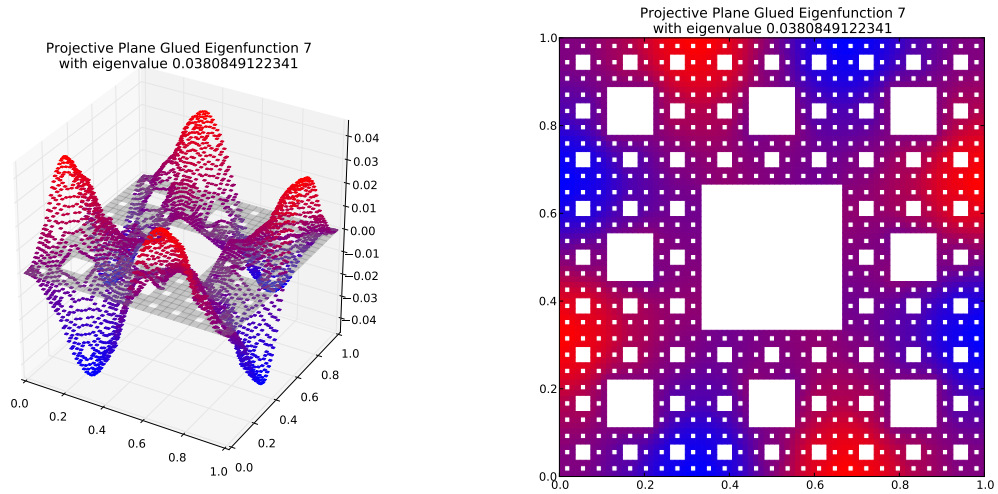
Compare to  $m = 3$  eigenspace with eigenvalue 0.233859691829



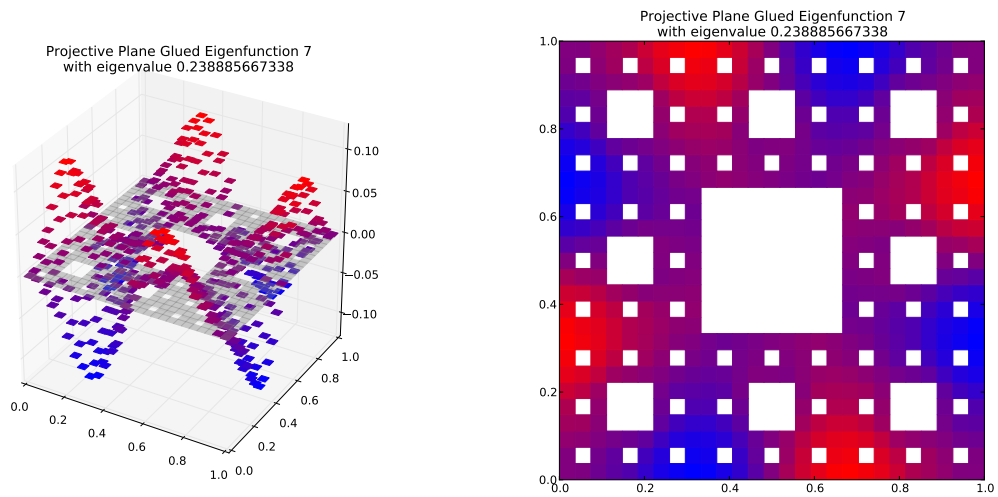
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.159622266916$   
Dot Value: 0.00012213489380386022

## 8 $M = 4$ Eigenfunction 7

$M = 4$  Eigenfunction 7 has eigenvalue 0.0380849122341



Compare to  $m = 3$  eigenspace with eigenvalue 0.238885667338

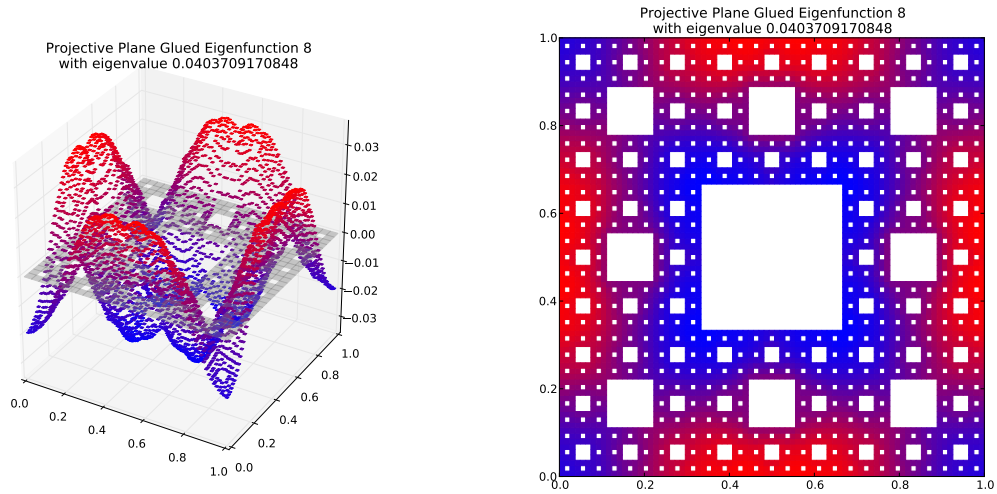


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.159427363971$

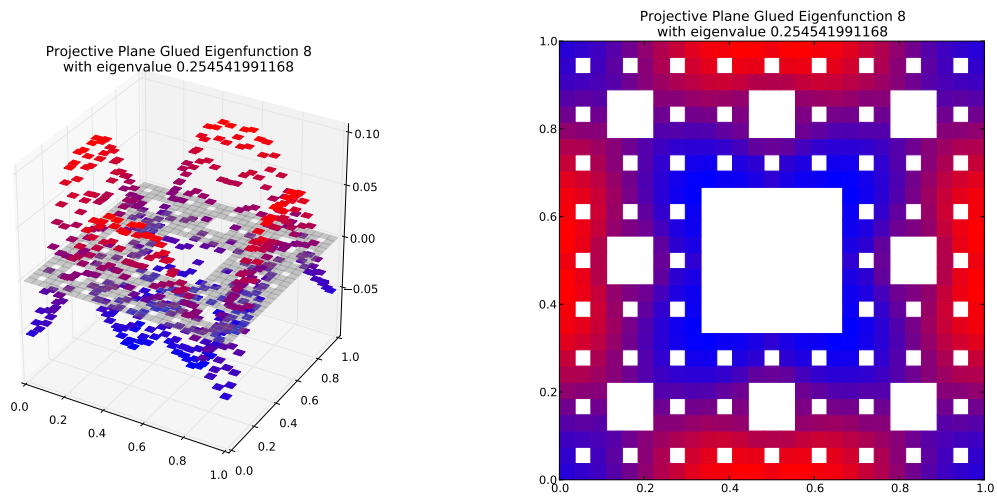
Dot Value: 0.00016677501814665874

## 9 $M = 4$ Eigenfunction 8

$M = 4$  Eigenfunction 8 has eigenvalue 0.0403709170848



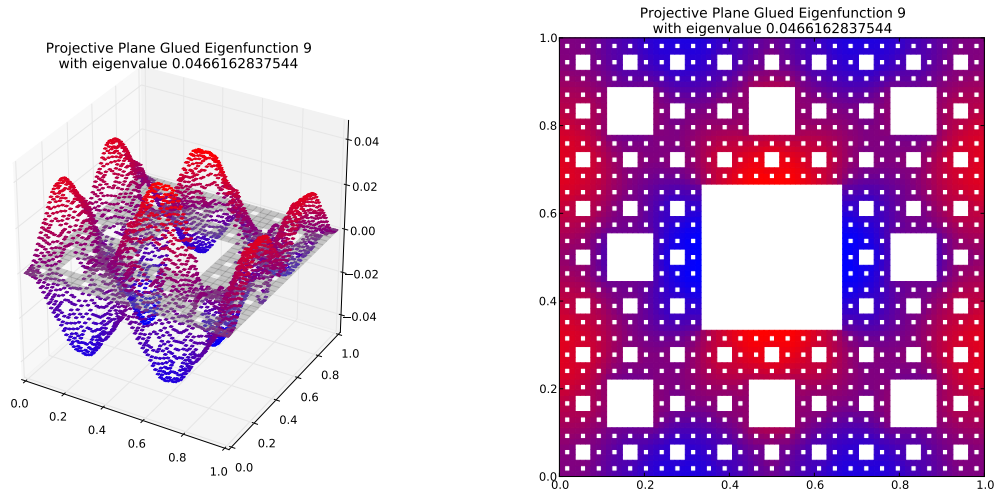
Compare to  $m = 3$  eigenspace with eigenvalue 0.254541991168



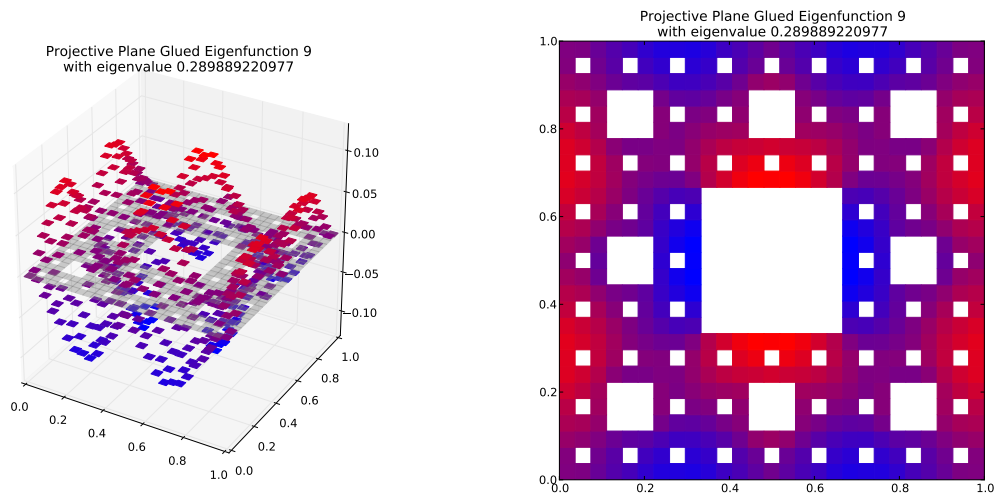
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.158602189366$   
Dot Value: 0.00031923910090536634

## 10 $M = 4$ Eigenfunction 9

$M = 4$  Eigenfunction 9 has eigenvalue 0.0466162837544



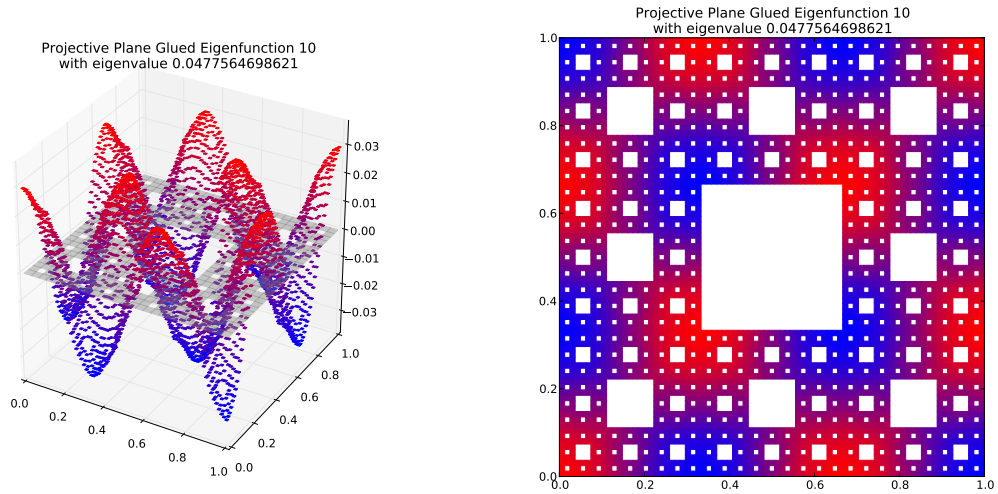
Compare to  $m = 3$  eigenspace with eigenvalue 0.289889220977



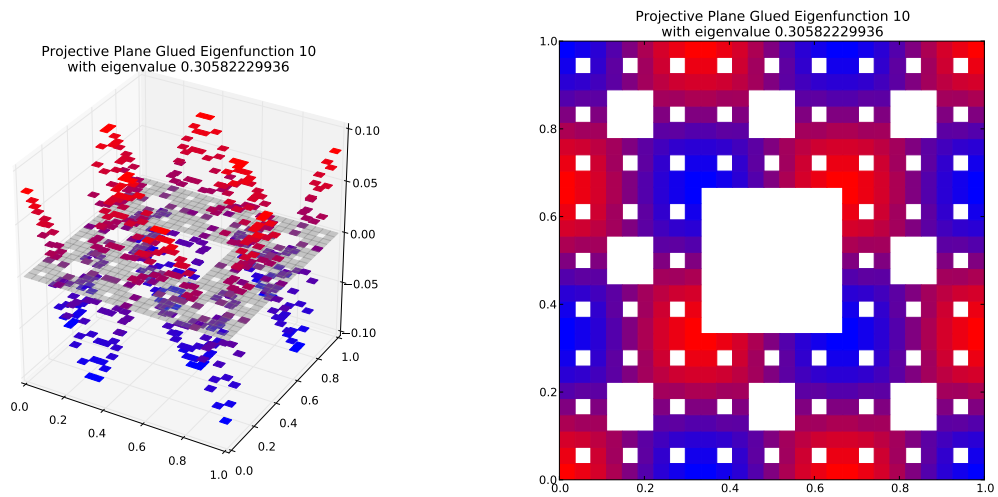
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160807233871$   
Dot Value: 0.0001841768037885716

# 11 $M = 4$ Eigenfunction 10

$M = 4$  Eigenfunction 10 has eigenvalue 0.047756469862



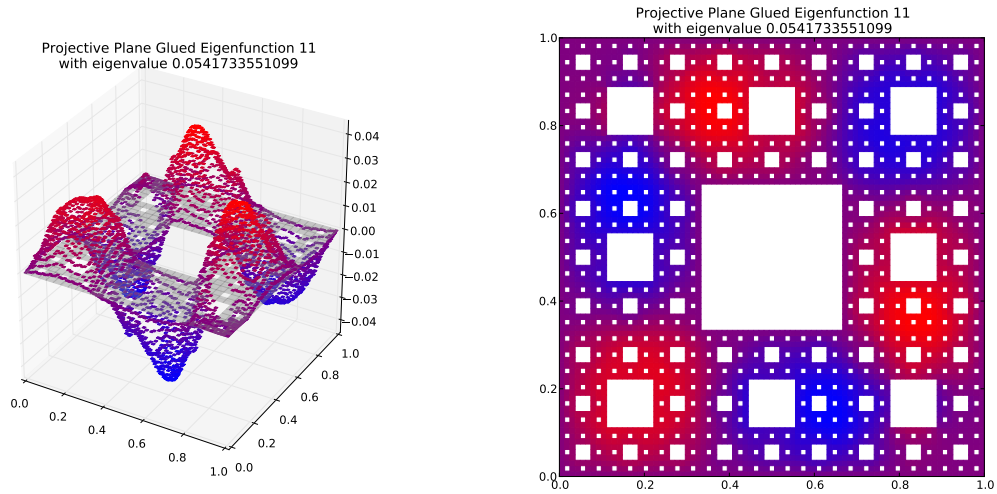
Compare to  $m = 3$  eigenspace with eigenvalue 0.30582229936



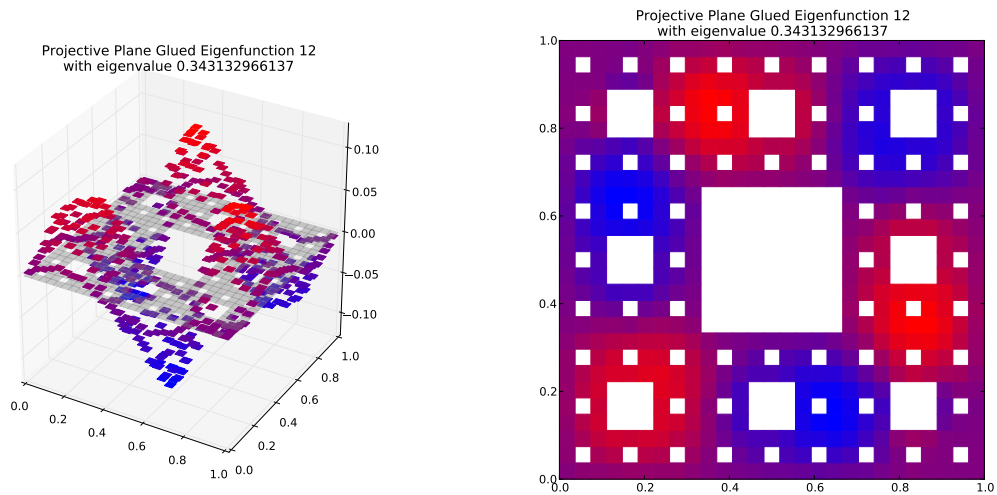
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.156157578967$   
Dot Value: 0.00017225677959209484

## 12 $M = 4$ Eigenfunction 11

$M = 4$  Eigenfunction 11 has eigenvalue 0.0541733551099



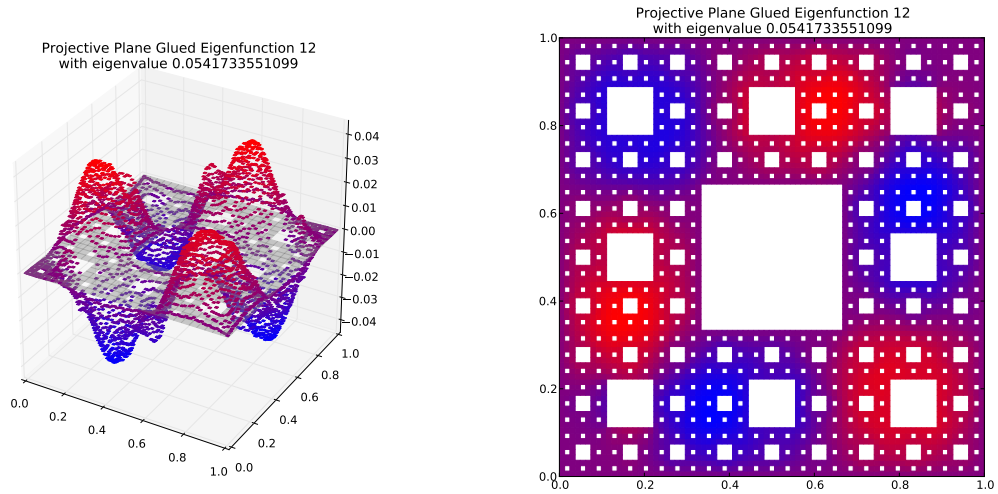
Compare to  $m = 3$  eigenspace with eigenvalue 0.343132966137  
(Note: Eigenspace Dimension  $> 1$ )



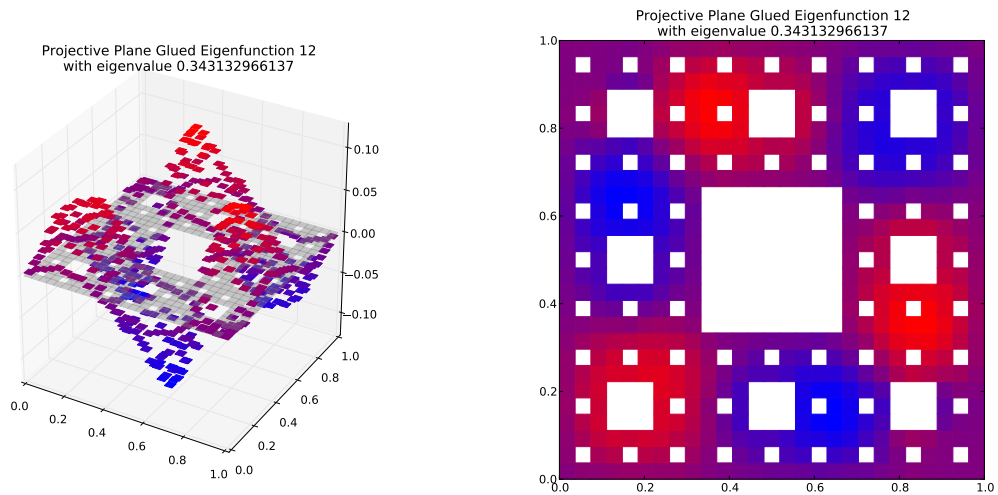
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157878608167$   
Dot Value: 0.00037827082523067546

### 13 $M = 4$ Eigenfunction 12

$M = 4$  Eigenfunction 12 has eigenvalue 0.0541733551099



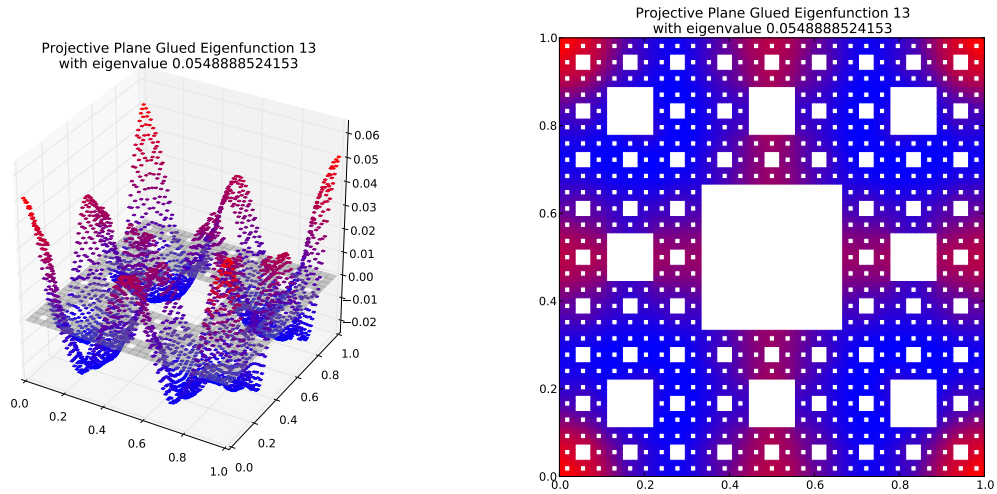
Compare to  $m = 3$  eigenspace with eigenvalue 0.343132966137  
(Note: Eigenspace Dimension  $> 1$ )



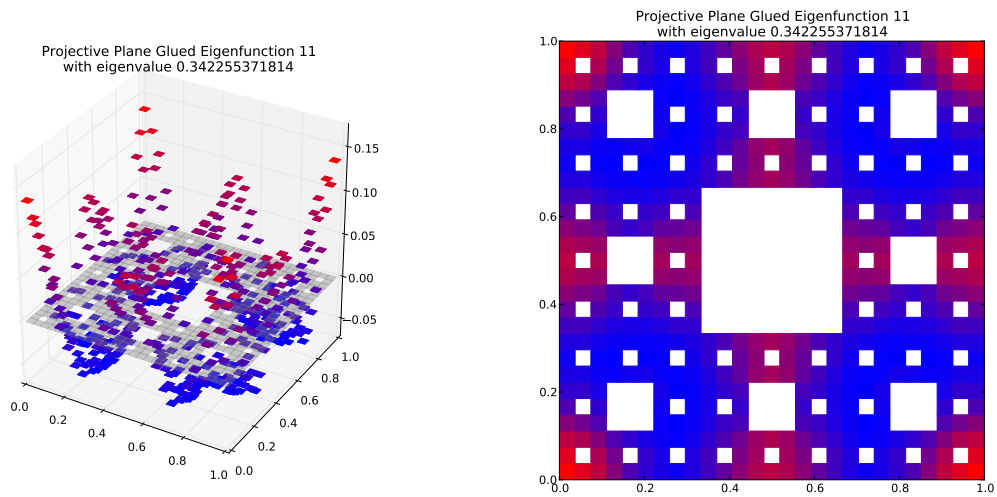
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.157878608167$   
Dot Value: 0.00037827082523056443

## 14 $M = 4$ Eigenfunction 13

$M = 4$  Eigenfunction 13 has eigenvalue 0.054888524153



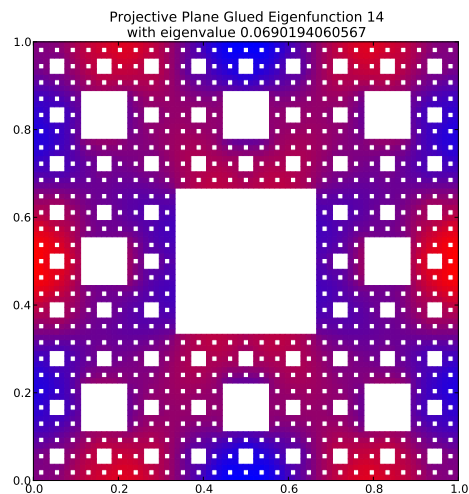
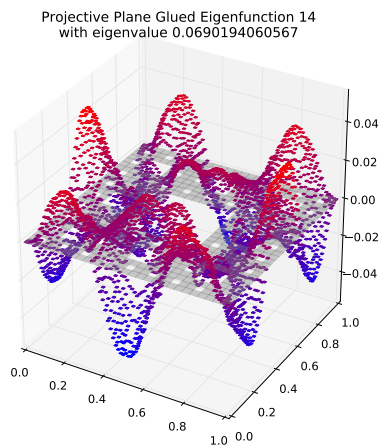
Compare to  $m = 3$  eigenspace with eigenvalue 0.342255371814



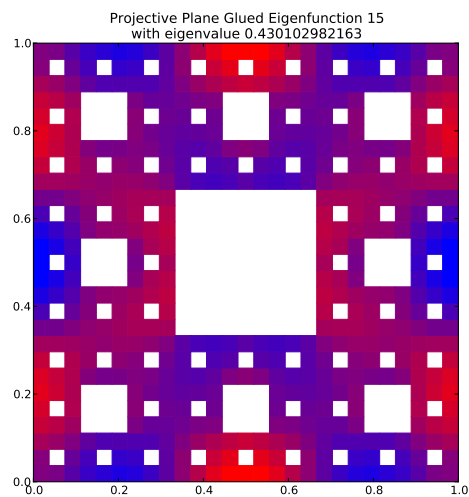
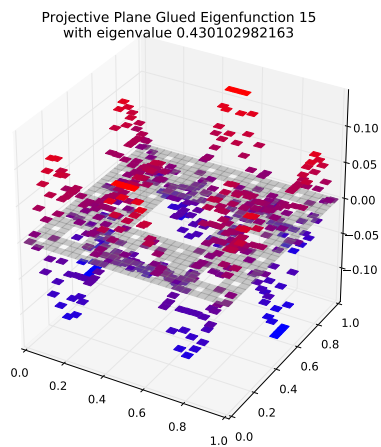
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160373969076$   
Dot Value: 0.000736576409165357

## 15 $M = 4$ Eigenfunction 14

$M = 4$  Eigenfunction 14 has eigenvalue 0.0690194060567



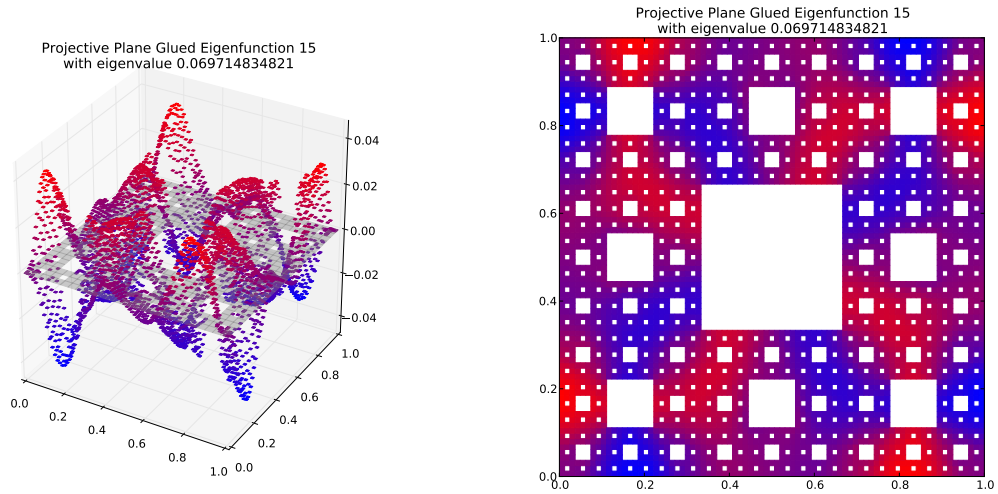
Compare to  $m = 3$  eigenspace with eigenvalue 0.430102982163



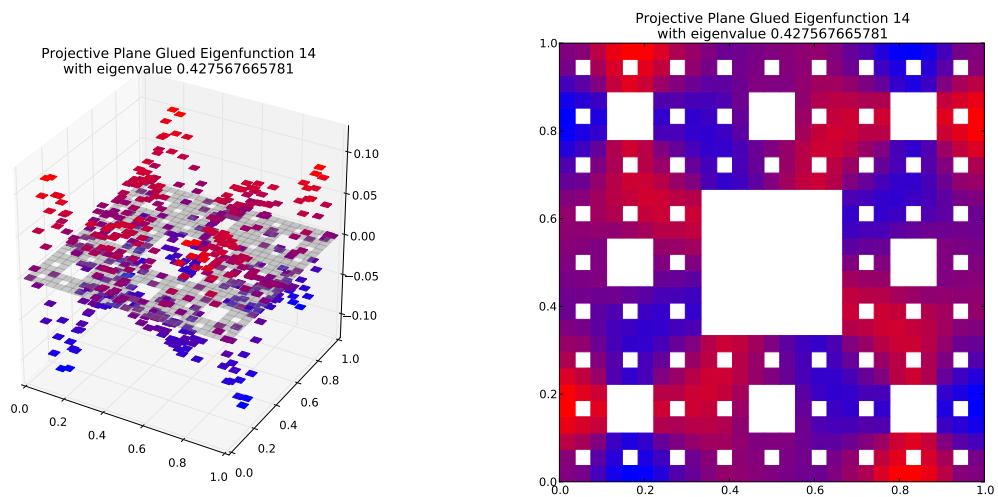
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160471814703$   
Dot Value: 0.0003659335272420128

## 16 $M = 4$ Eigenfunction 15

$M = 4$  Eigenfunction 15 has eigenvalue 0.069714834821



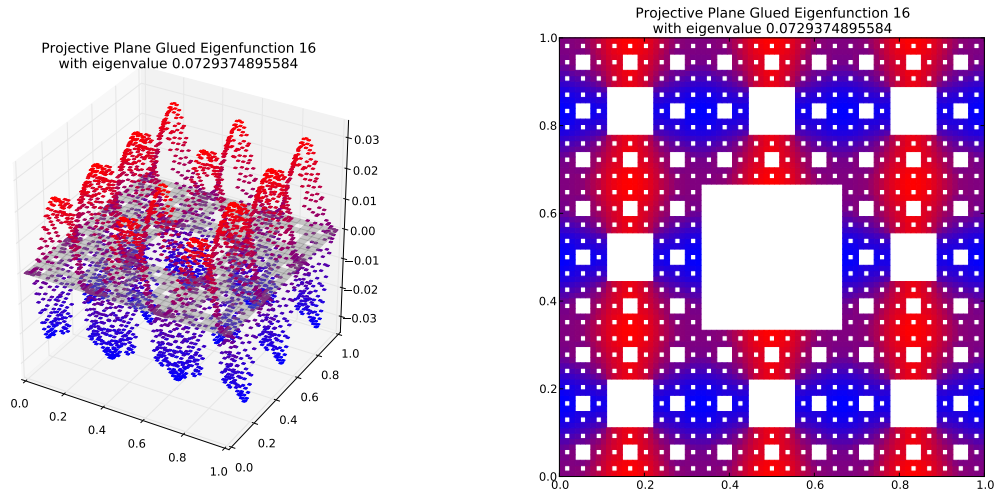
Compare to  $m = 3$  eigenspace with eigenvalue 0.427567665781



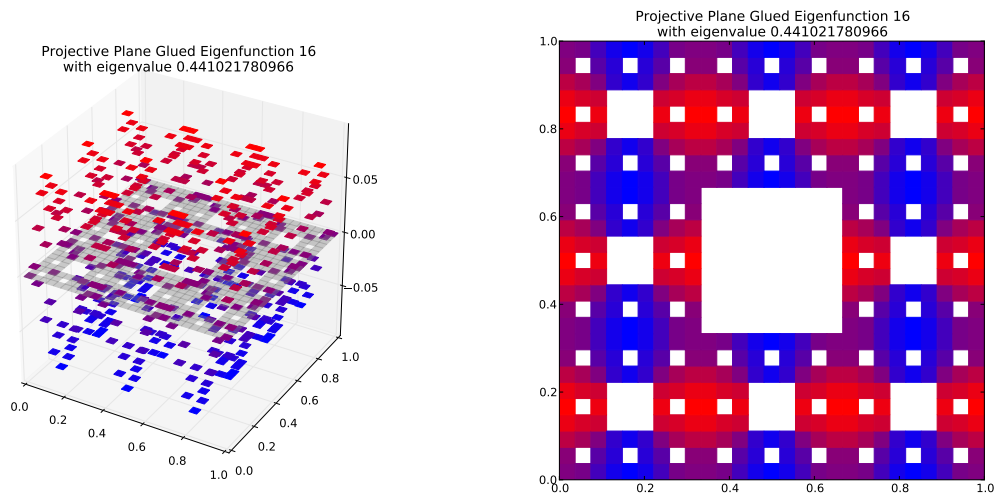
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163049829069$   
Dot Value: 0.00048539060804075884

## 17 $M = 4$ Eigenfunction 16

$M = 4$  Eigenfunction 16 has eigenvalue 0.0729374895584



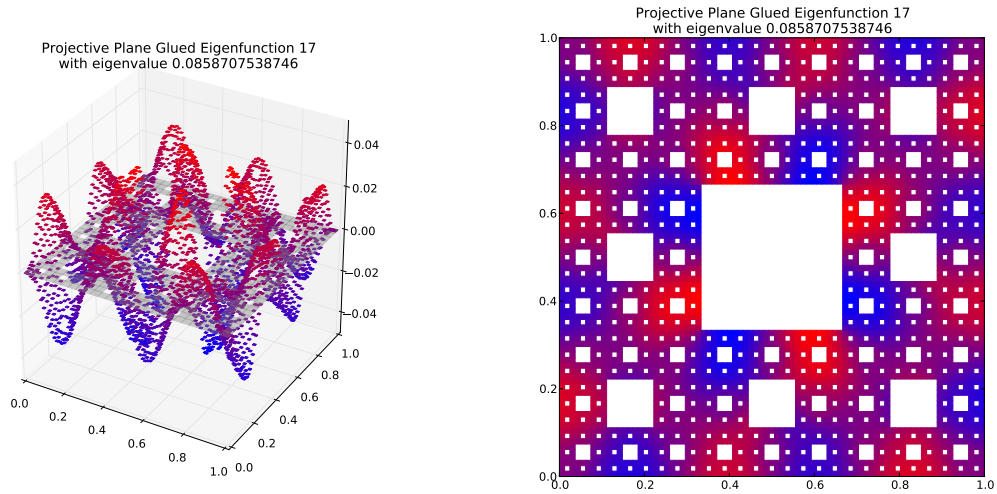
Compare to  $m = 3$  eigenspace with eigenvalue 0.441021780966



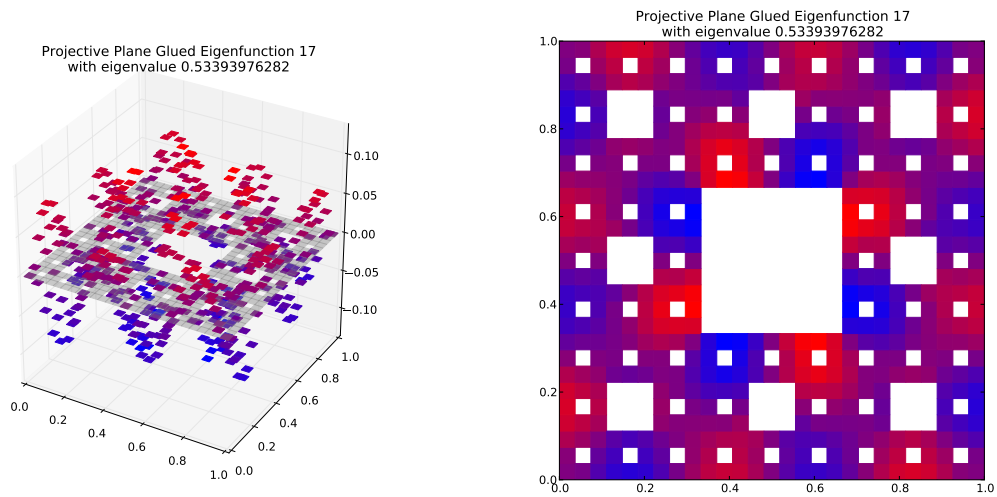
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.16538296453$   
Dot Value: 0.00019085106911675975

## 18 $M = 4$ Eigenfunction 17

$M = 4$  Eigenfunction 17 has eigenvalue 0.0858707538746



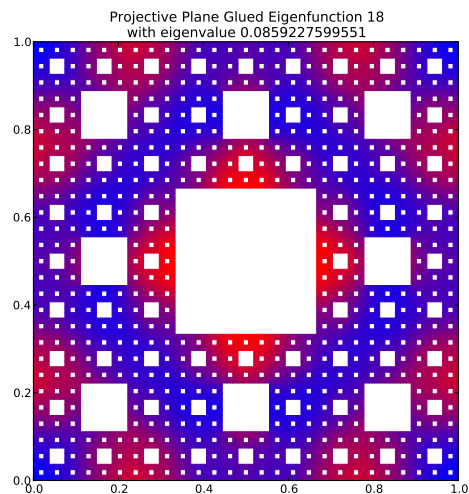
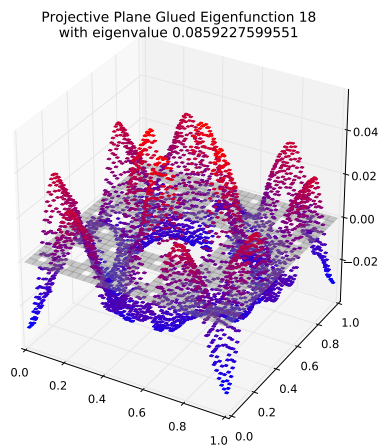
Compare to  $m = 3$  eigenspace with eigenvalue 0.53393976282



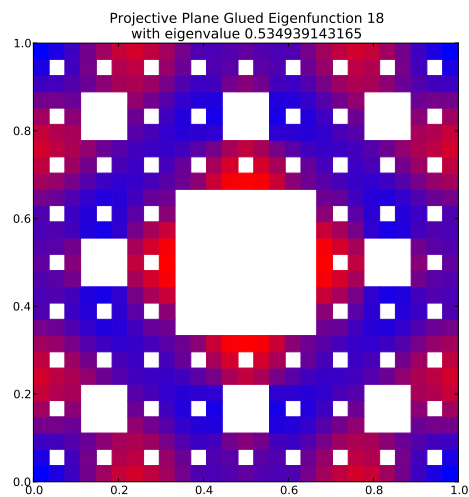
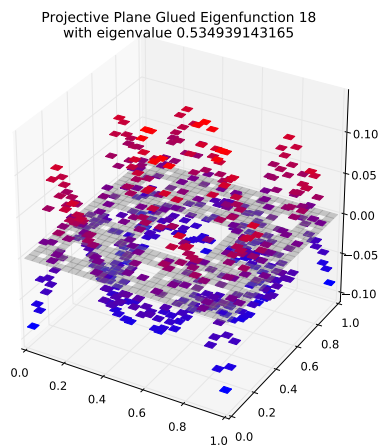
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160824796829$   
Dot Value: 0.0013019861591897497

## 19 $M = 4$ Eigenfunction 18

$M = 4$  Eigenfunction 18 has eigenvalue 0.0859227599551



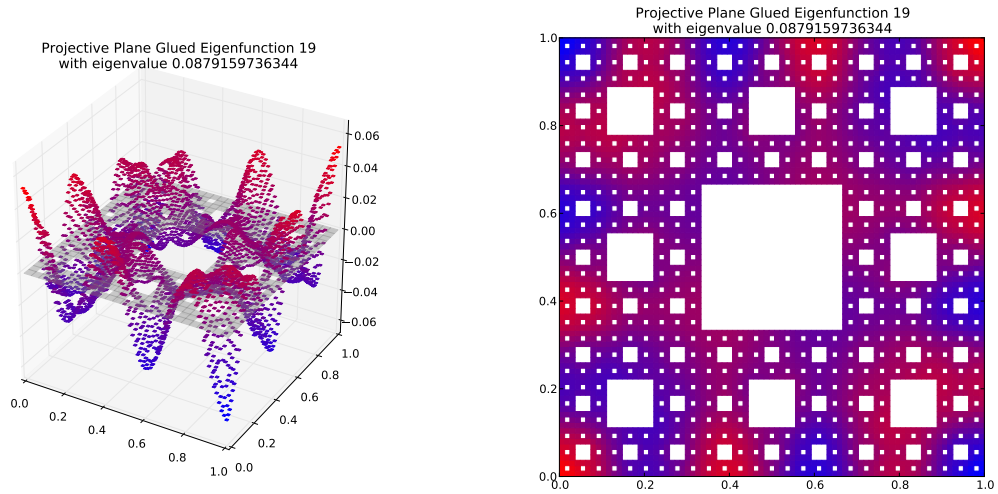
Compare to  $m = 3$  eigenspace with eigenvalue 0.534939143165



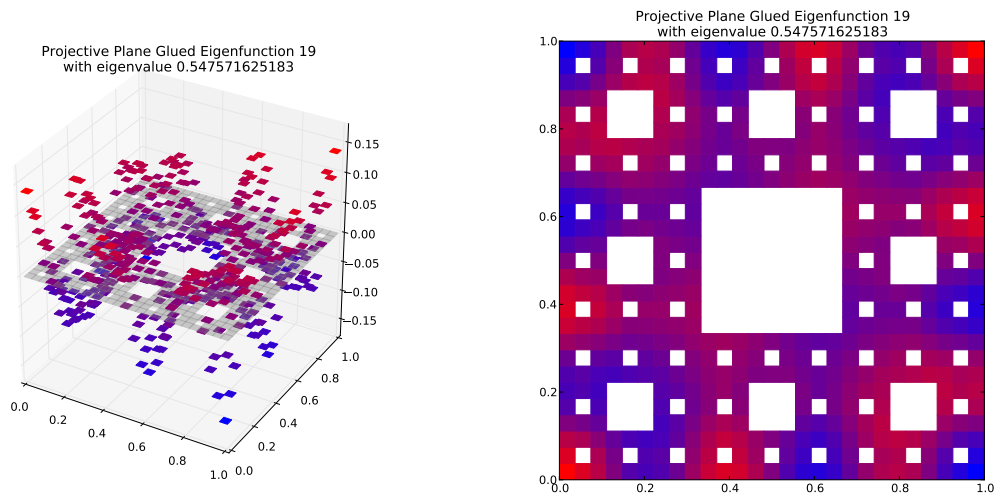
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160621560514$   
Dot Value: 0.0020693952477724986

## 20 $M = 4$ Eigenfunction 19

$M = 4$  Eigenfunction 19 has eigenvalue 0.0879159736344



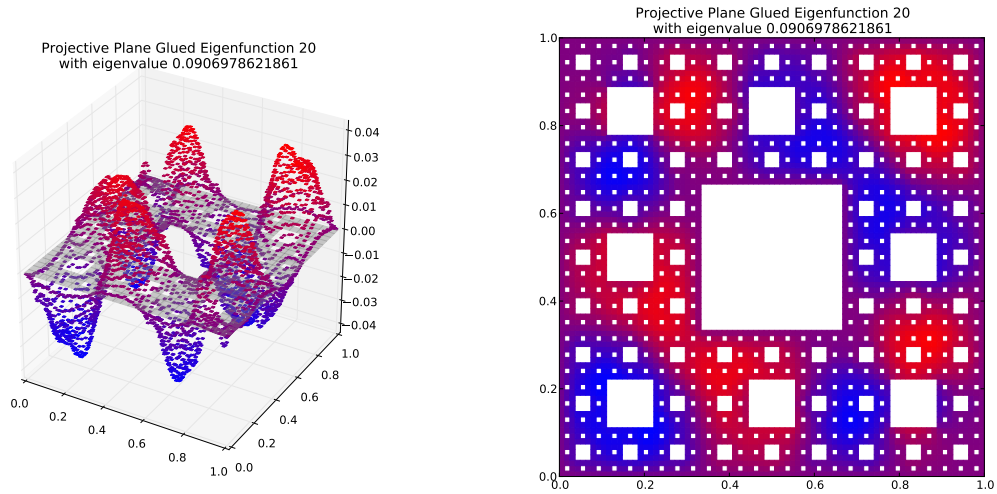
Compare to  $m = 3$  eigenspace with eigenvalue 0.547571625183



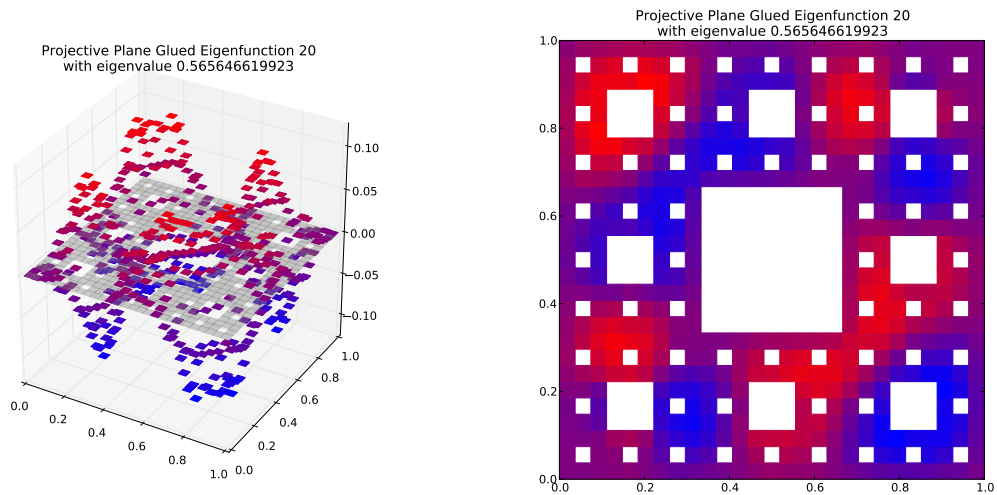
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160556116481$   
Dot Value: 0.000752151634817233

## 21 $M = 4$ Eigenfunction 20

$M = 4$  Eigenfunction 20 has eigenvalue 0.0906978621861



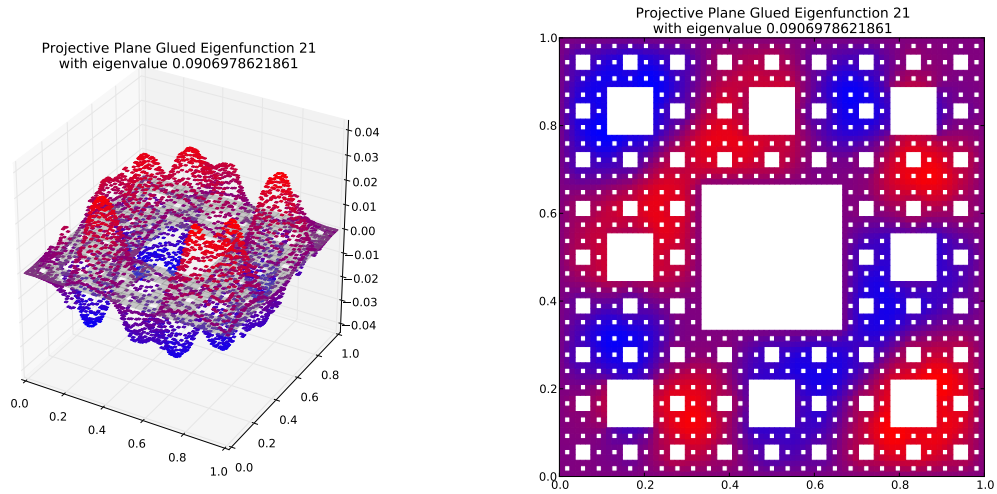
Compare to  $m = 3$  eigenspace with eigenvalue 0.565646619923  
(Note: Eigenspace Dimension  $> 1$ )



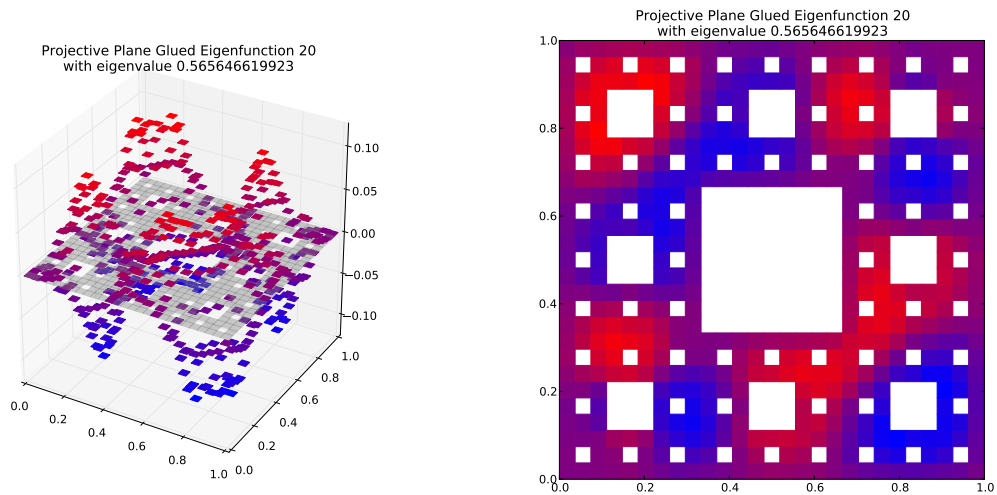
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160343682772$   
Dot Value: 0.0011818544967552302

## 22 $M = 4$ Eigenfunction 21

$M = 4$  Eigenfunction 21 has eigenvalue 0.0906978621861



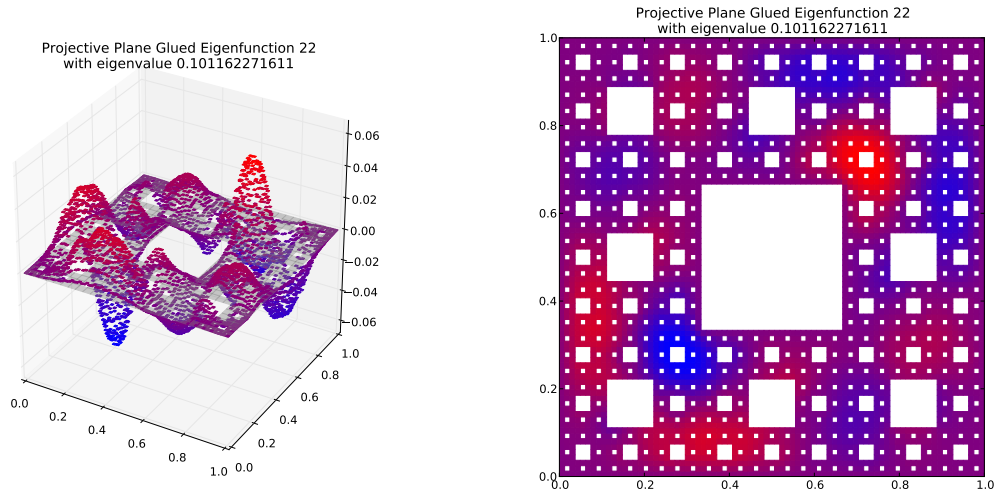
Compare to  $m = 3$  eigenspace with eigenvalue 0.565646619923  
(Note: Eigenspace Dimension  $> 1$ )



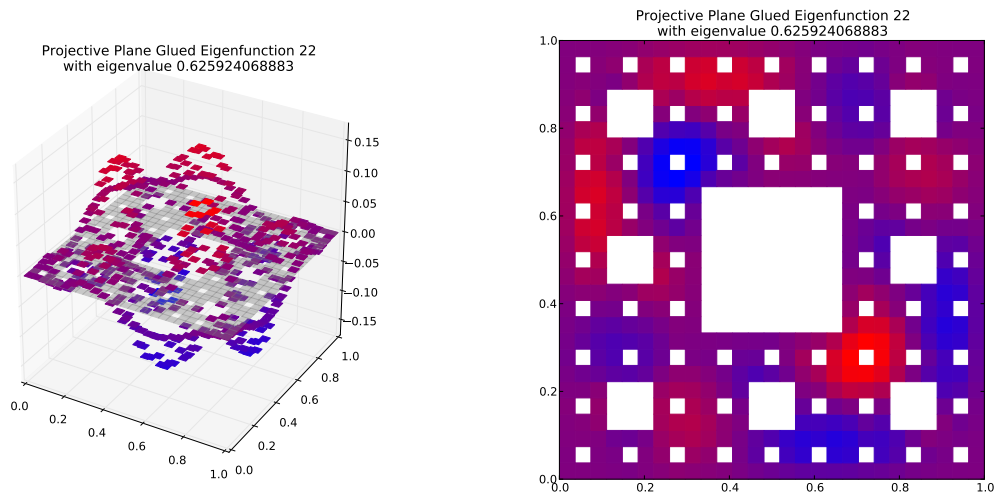
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160343682772$   
Dot Value: 0.0011818544967553413

## 23 $M = 4$ Eigenfunction 22

$M = 4$  Eigenfunction 22 has eigenvalue 0.101162271611



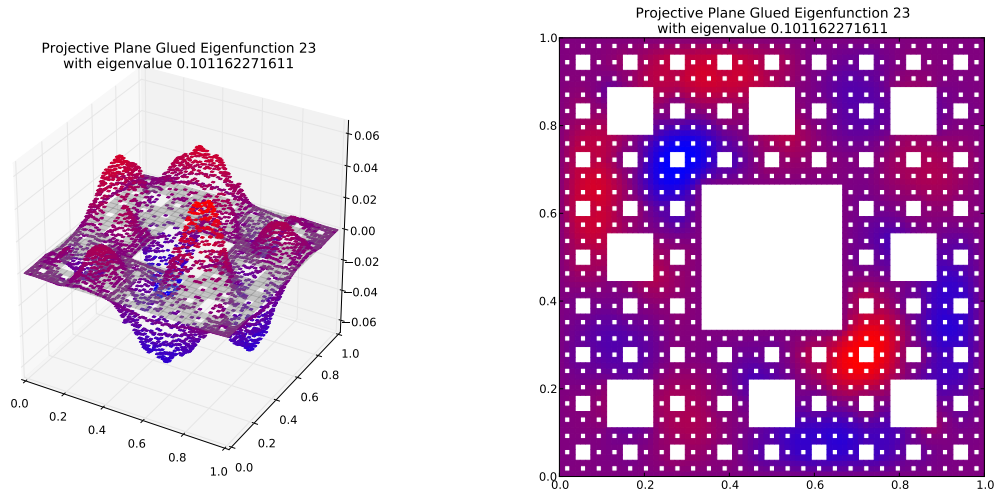
Compare to  $m = 3$  eigenspace with eigenvalue 0.625924068883  
(Note: Eigenspace Dimension  $> 1$ )



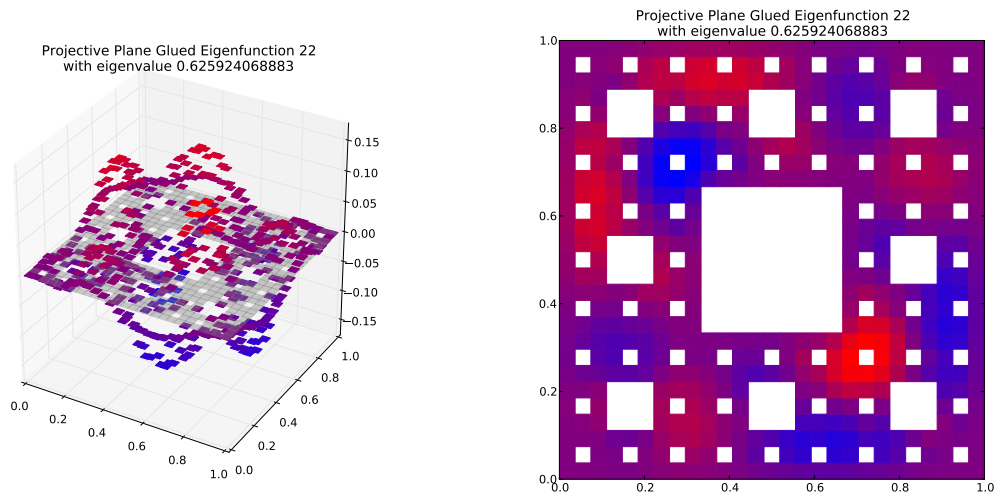
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.161620676757$   
Dot Value: 0.0012685692555612915

## 24 $M = 4$ Eigenfunction 23

$M = 4$  Eigenfunction 23 has eigenvalue 0.101162271611



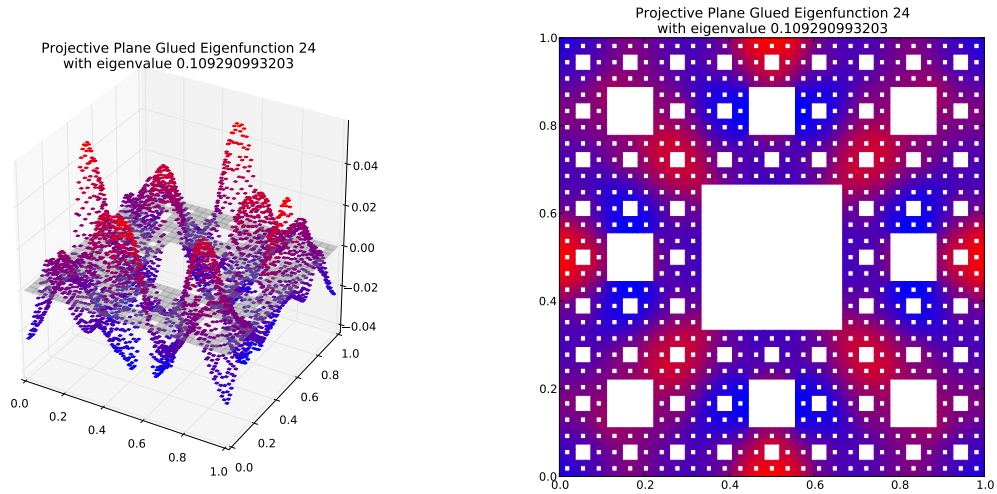
Compare to  $m = 3$  eigenspace with eigenvalue 0.625924068883  
(Note: Eigenspace Dimension  $> 1$ )



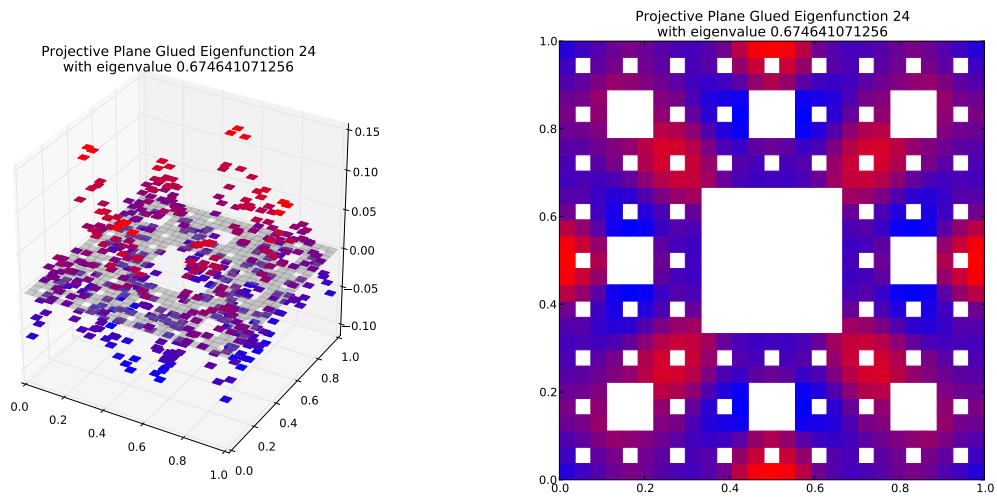
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.161620676757$   
Dot Value: 0.0012685692555616246

## 25 $M = 4$ Eigenfunction 24

$M = 4$  Eigenfunction 24 has eigenvalue 0.109290993203



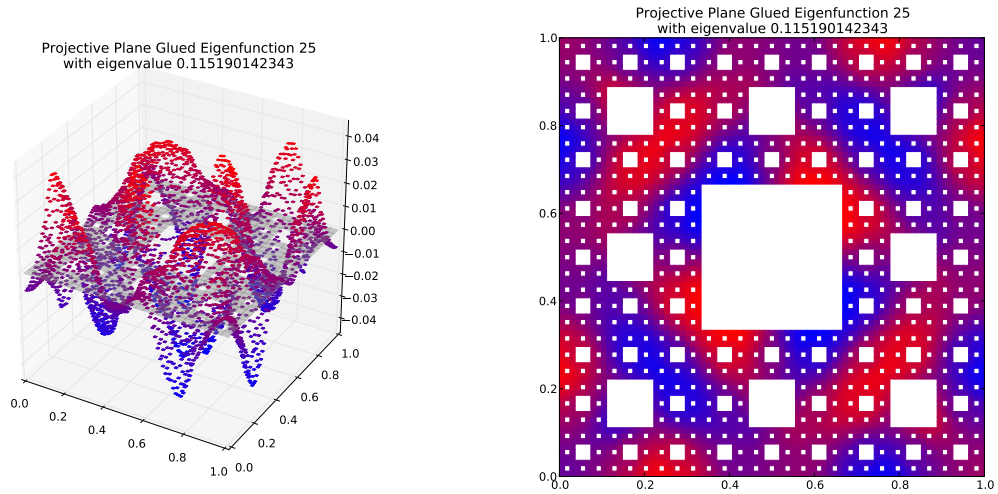
Compare to  $m = 3$  eigenspace with eigenvalue 0.674641071256



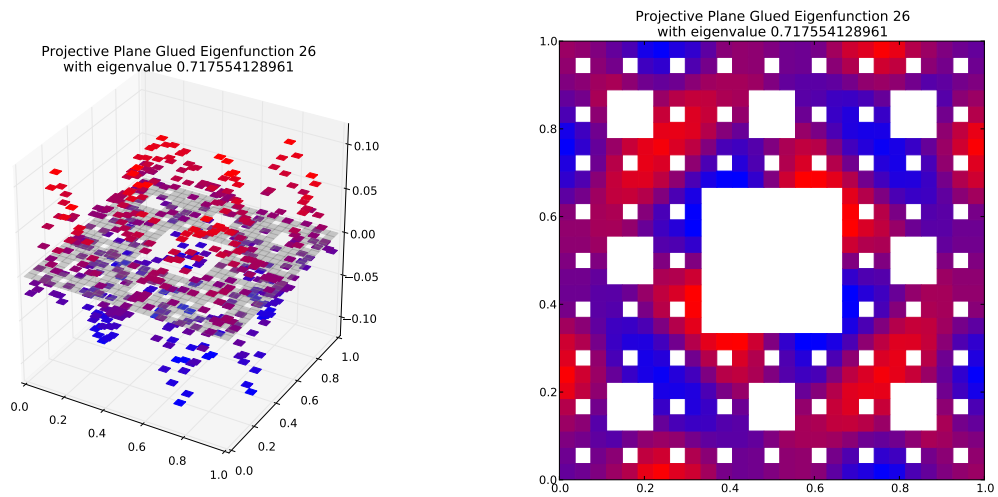
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.161998724743$   
Dot Value: 0.002216286693924041

## 26 $M = 4$ Eigenfunction 25

$M = 4$  Eigenfunction 25 has eigenvalue 0.115190142343



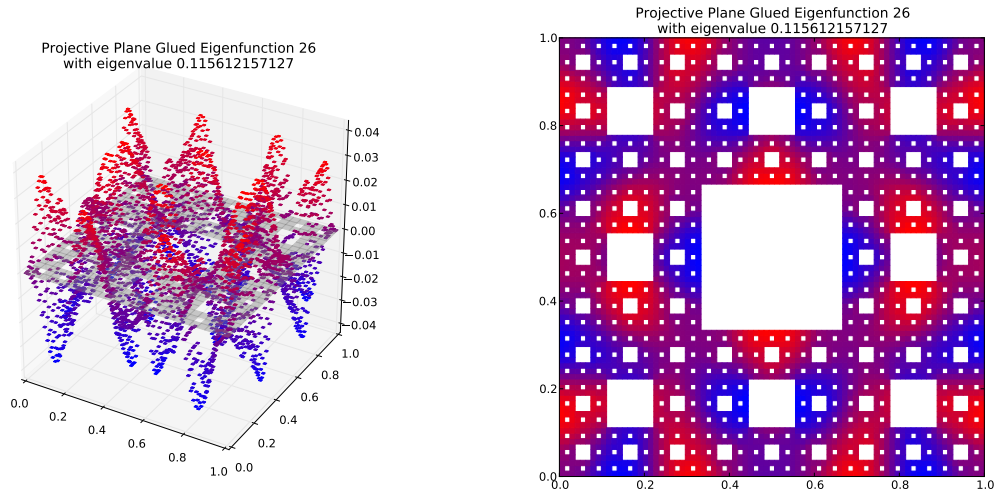
Compare to  $m = 3$  eigenspace with eigenvalue 0.717554128961



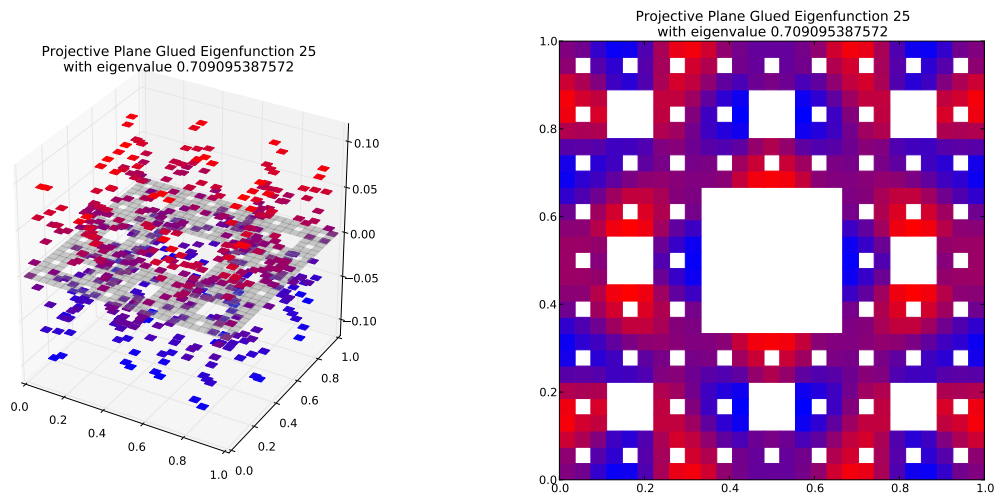
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.160531641717$   
Dot Value: 0.0011386770236814225

## 27 $M = 4$ Eigenfunction 26

$M = 4$  Eigenfunction 26 has eigenvalue 0.115612157127



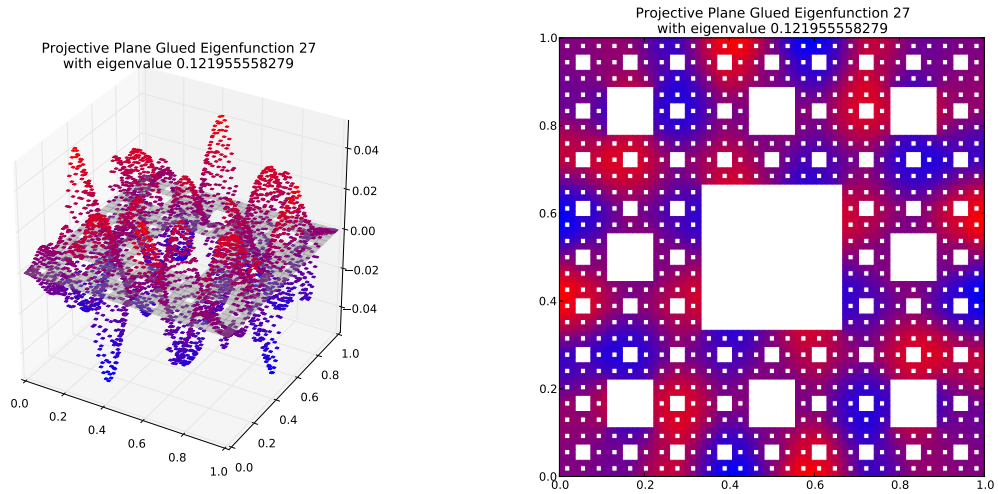
Compare to  $m = 3$  eigenspace with eigenvalue 0.709095387572



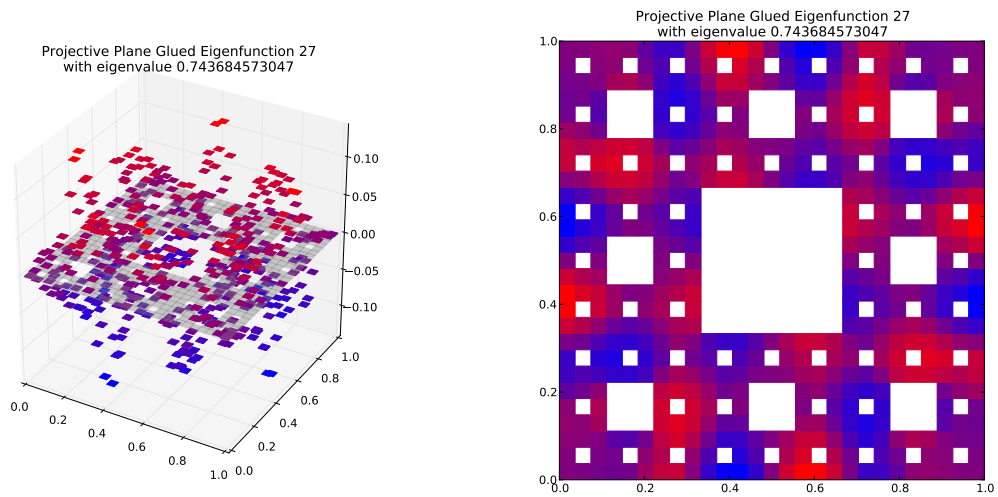
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163041755952$   
Dot Value: 0.0017738125603344868

## 28 $M = 4$ Eigenfunction 27

$M = 4$  Eigenfunction 27 has eigenvalue 0.12195558279



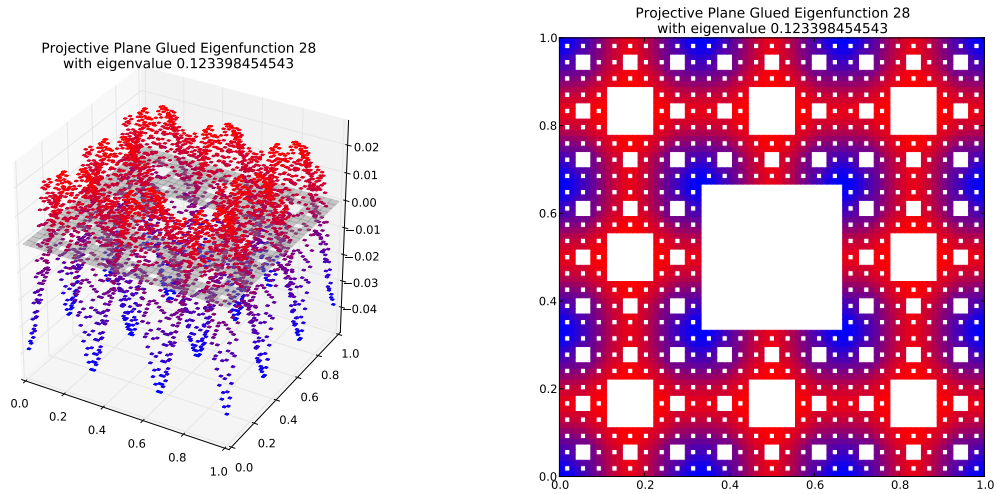
Compare to  $m = 3$  eigenspace with eigenvalue 0.743684573047



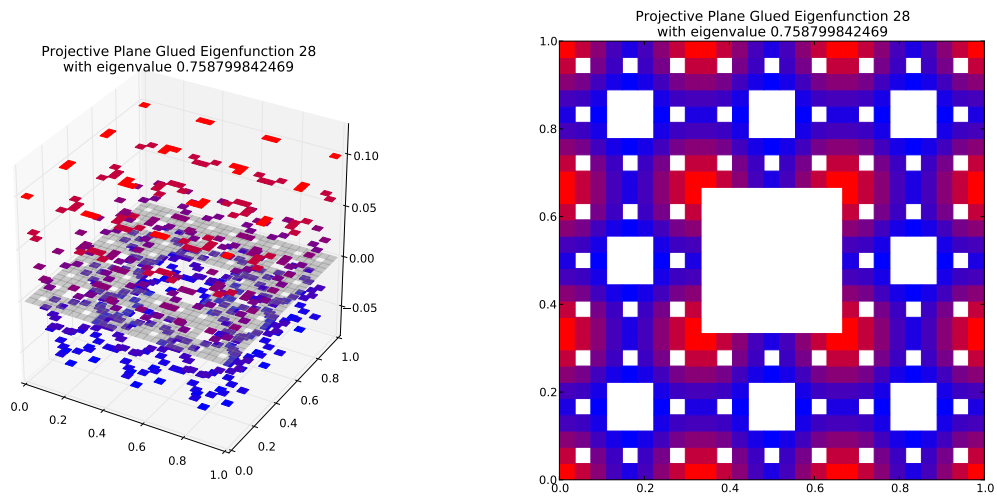
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163988285758$   
Dot Value: 0.0018996236200279348

## 29 $M = 4$ Eigenfunction 28

$M = 4$  Eigenfunction 28 has eigenvalue 0.123398454543



Compare to  $m = 3$  eigenspace with eigenvalue 0.758799842469

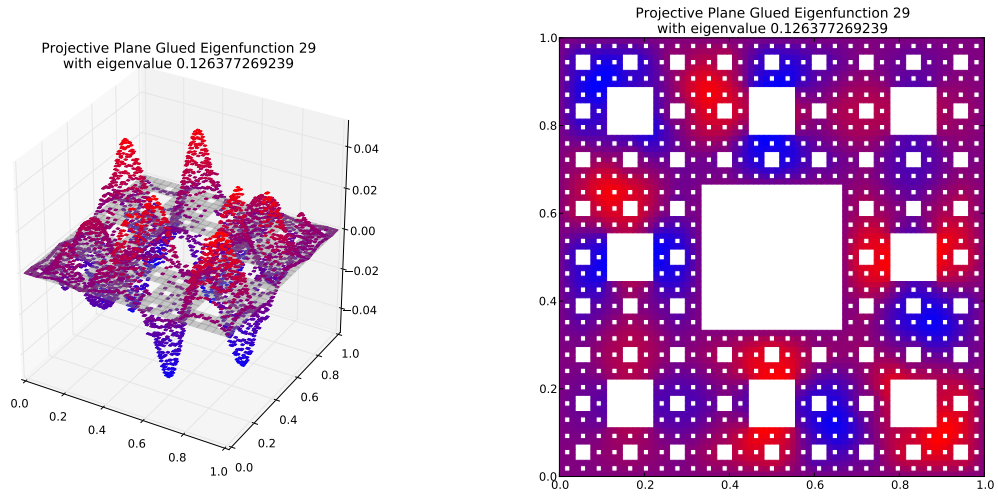


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.16262319473$

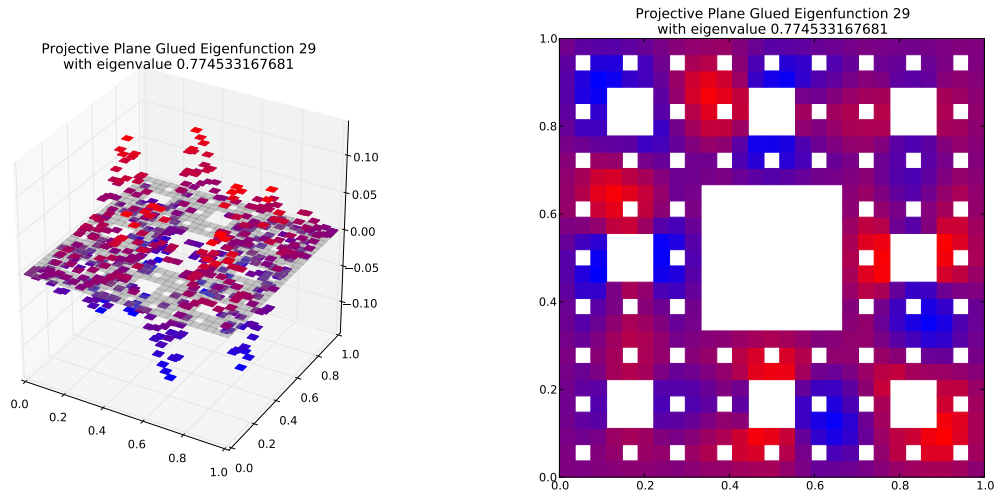
Dot Value: 0.0014215263537856737

### 30 $M = 4$ Eigenfunction 29

$M = 4$  Eigenfunction 29 has eigenvalue 0.126377269239



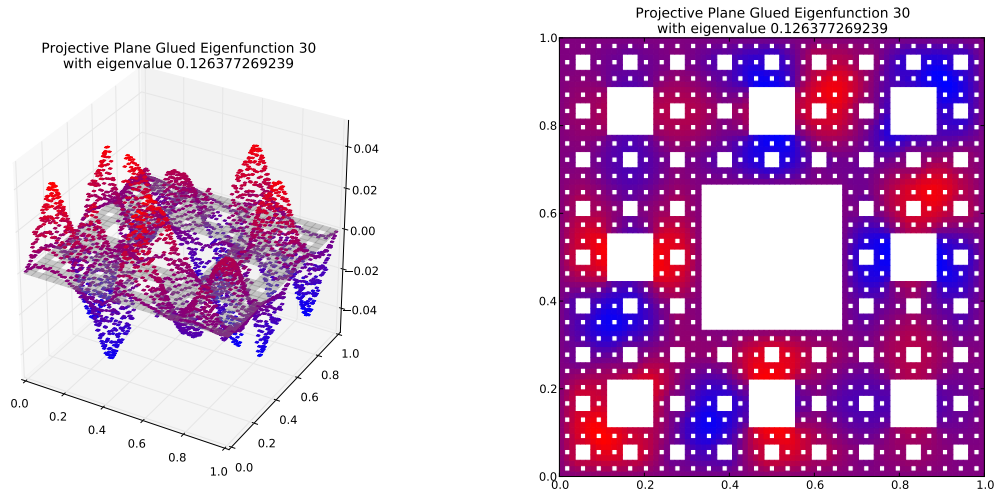
Compare to  $m = 3$  eigenspace with eigenvalue 0.774533167681  
(Note: Eigenspace Dimension  $> 1$ )



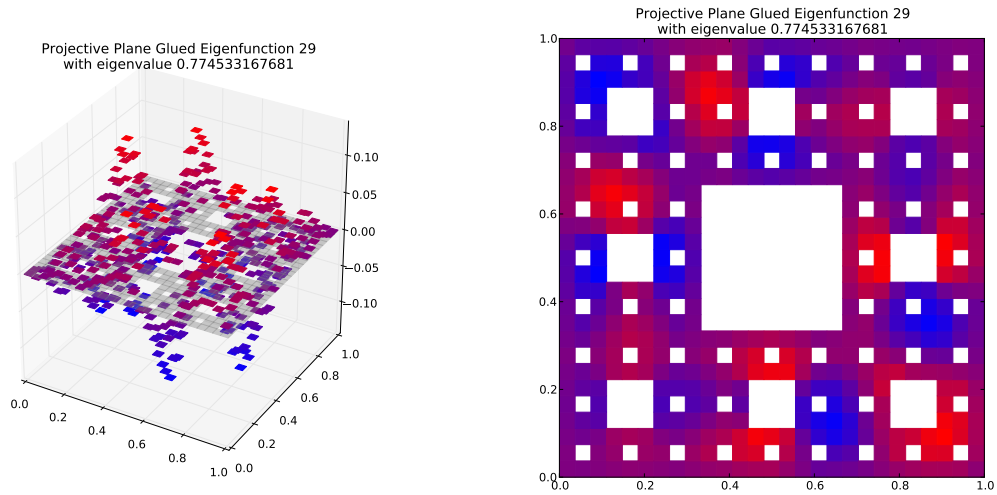
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163165729387$   
Dot Value: 0.004290675715828862

### 31 $M = 4$ Eigenfunction 30

$M = 4$  Eigenfunction 30 has eigenvalue 0.126377269239



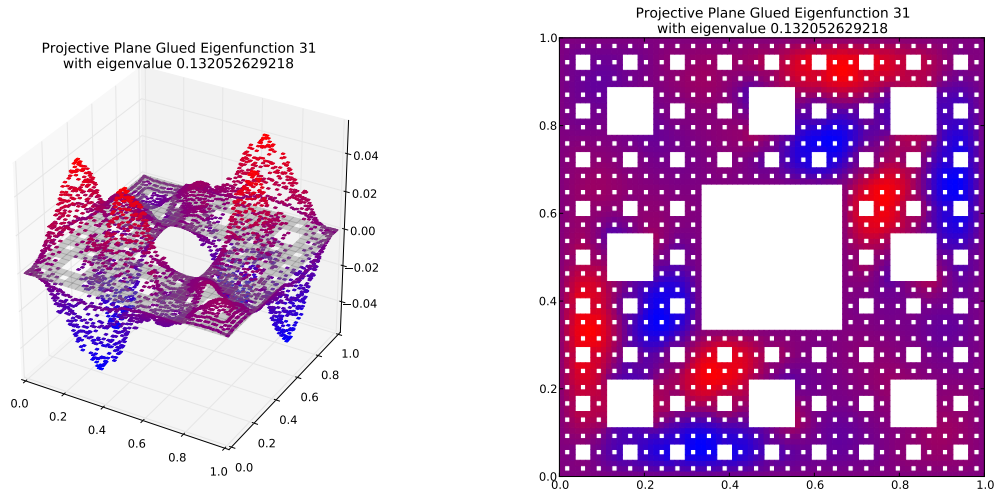
Compare to  $m = 3$  eigenspace with eigenvalue 0.774533167681  
(Note: Eigenspace Dimension  $> 1$ )



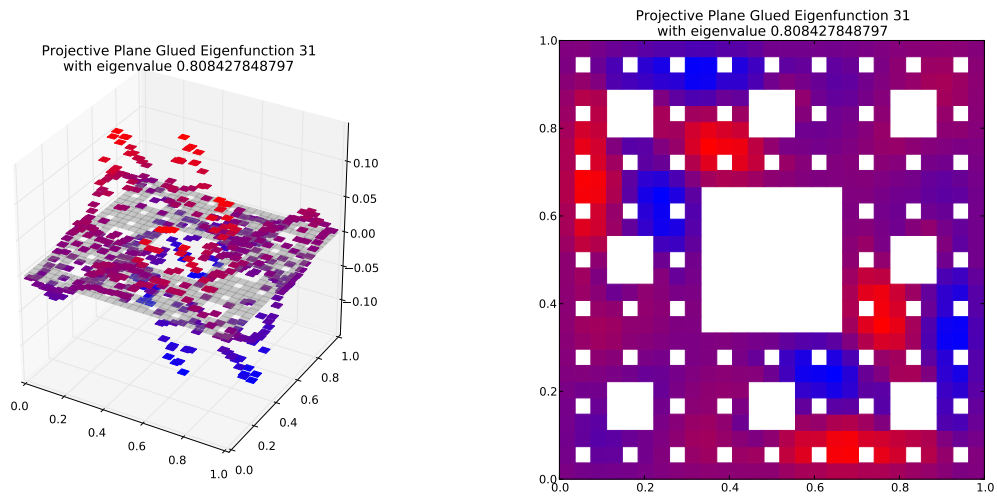
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163165729387$   
Dot Value: 0.004290675715825865

## 32 $M = 4$ Eigenfunction 31

$M = 4$  Eigenfunction 31 has eigenvalue 0.132052629218



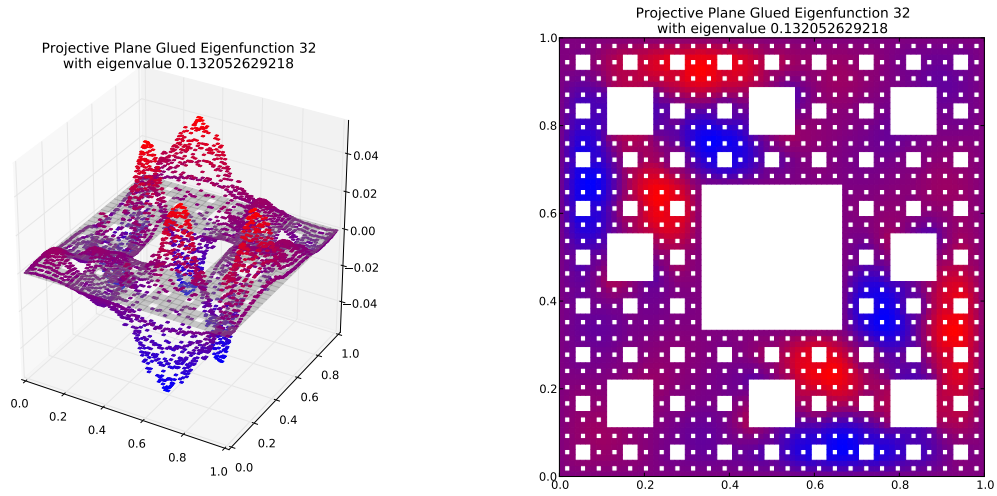
Compare to  $m = 3$  eigenspace with eigenvalue 0.808427848797  
(Note: Eigenspace Dimension  $> 1$ )



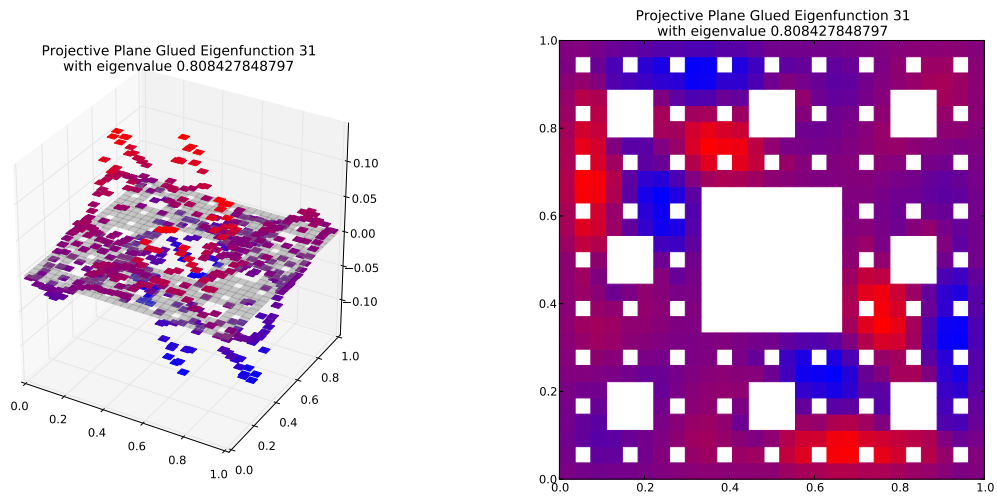
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163344978052$   
Dot Value: 0.0042407836960689504

### 33 $M = 4$ Eigenfunction 32

$M = 4$  Eigenfunction 32 has eigenvalue 0.132052629218



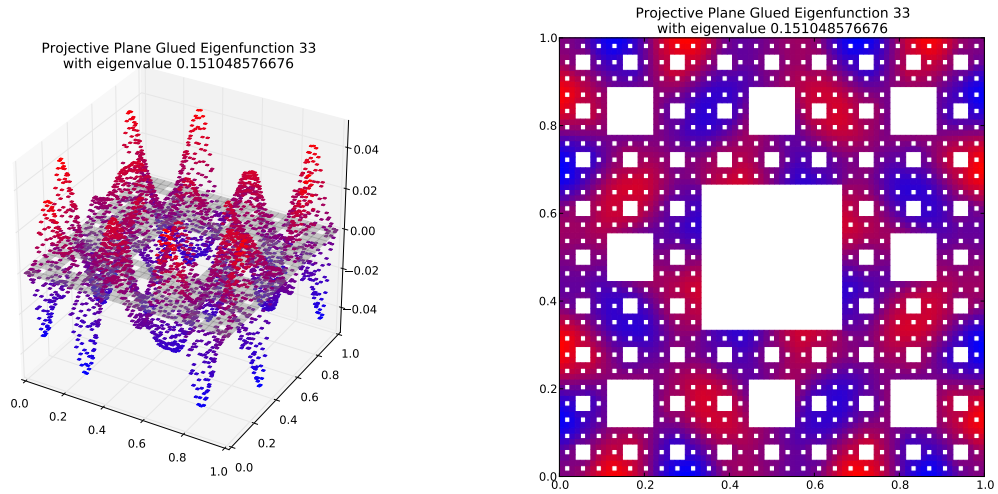
Compare to  $m = 3$  eigenspace with eigenvalue 0.808427848797  
(Note: Eigenspace Dimension  $> 1$ )



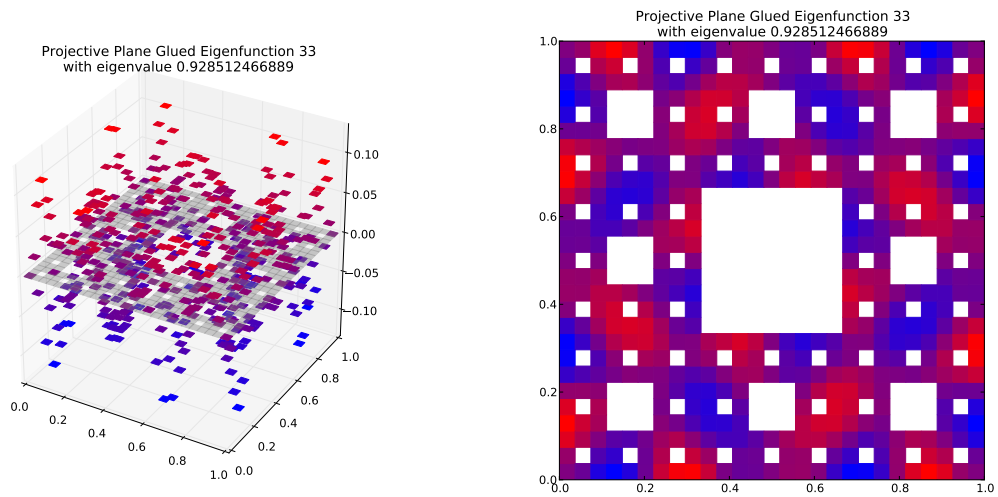
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.163344978052$   
Dot Value: 0.004240783696073169

### 34 $M = 4$ Eigenfunction 33

$M = 4$  Eigenfunction 33 has eigenvalue 0.151048576676



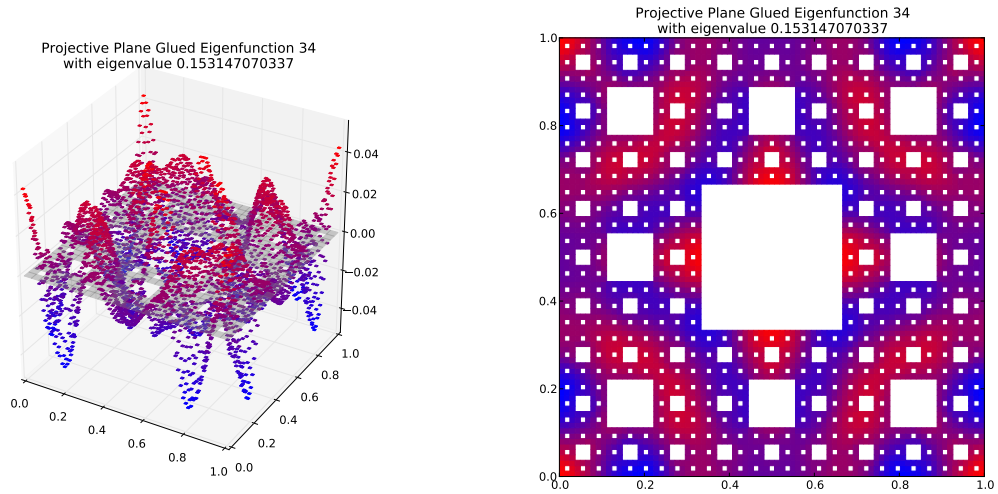
Compare to  $m = 3$  eigenspace with eigenvalue 0.928512466889



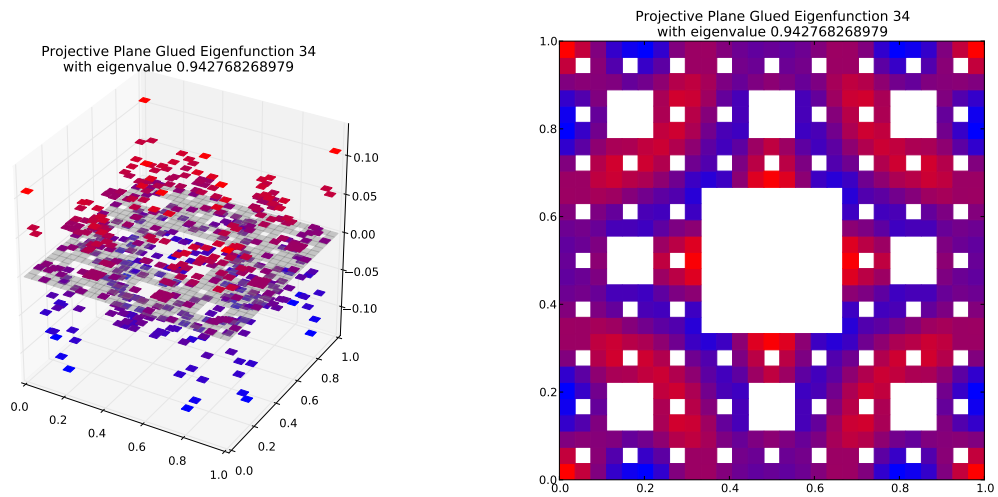
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.162678027558$   
Dot Value: 0.0018508786897730722

### 35 $M = 4$ Eigenfunction 34

$M = 4$  Eigenfunction 34 has eigenvalue 0.153147070337



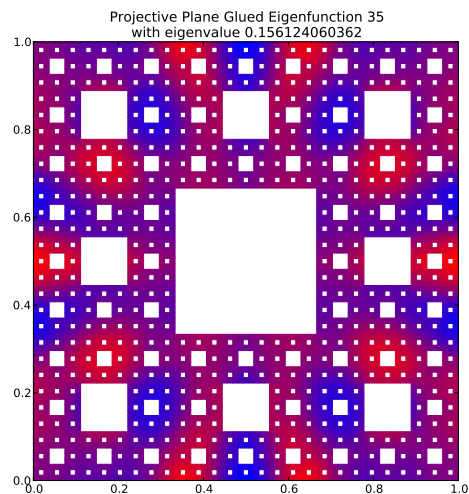
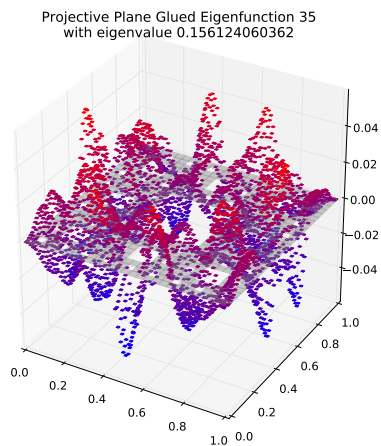
Compare to  $m = 3$  eigenspace with eigenvalue 0.942768268979



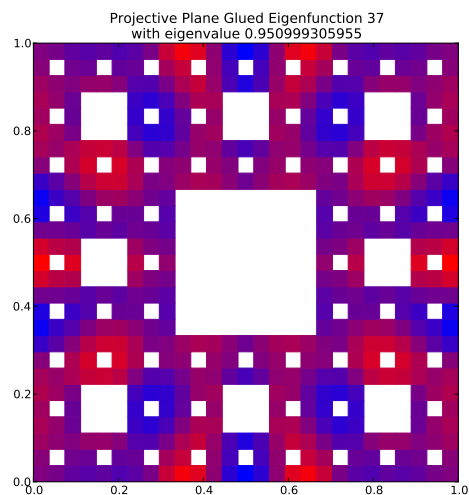
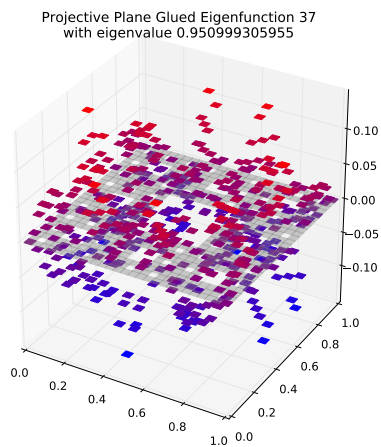
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.162444022965$   
Dot Value: 0.001938666720777693

### 36 $M = 4$ Eigenfunction 35

$M = 4$  Eigenfunction 35 has eigenvalue 0.156124060362



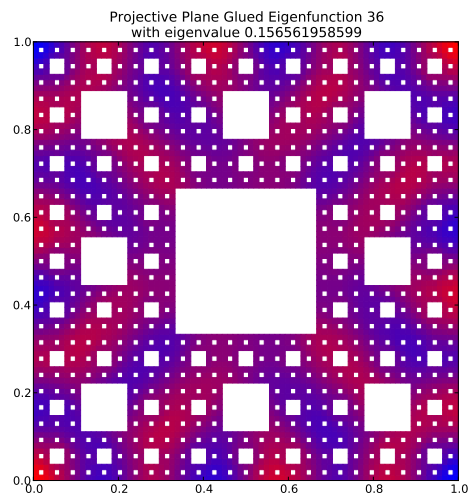
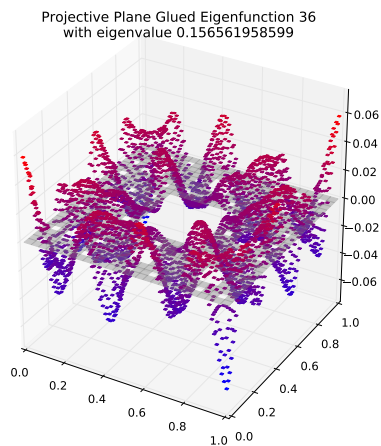
Compare to  $m = 3$  eigenspace with eigenvalue 0.950999305955



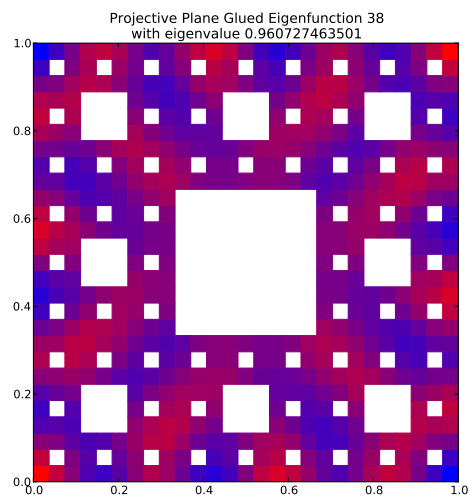
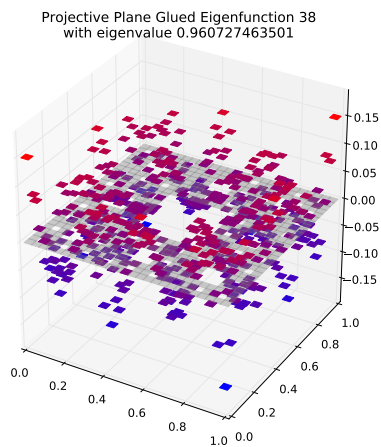
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.164168427237$   
Dot Value: 0.004620966766550438

### 37 $M = 4$ Eigenfunction 36

$M = 4$  Eigenfunction 36 has eigenvalue 0.156561958599



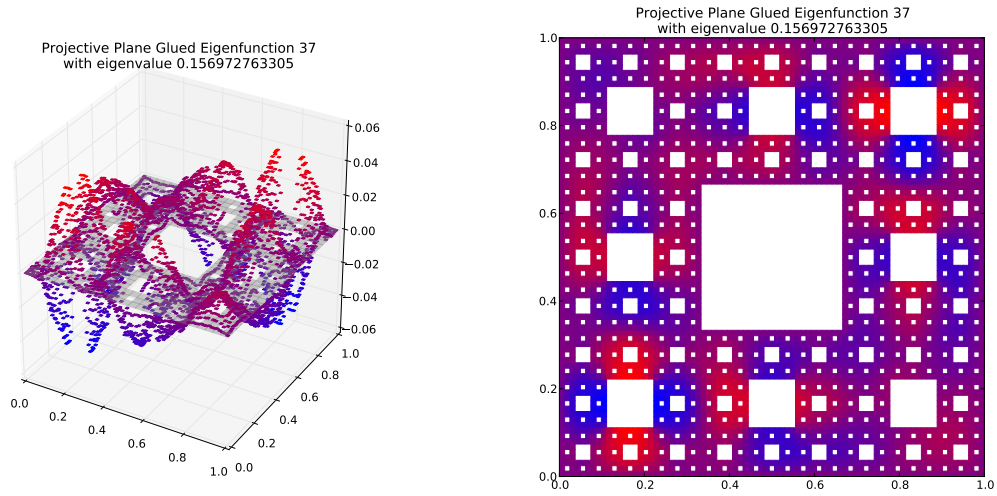
Compare to  $m = 3$  eigenspace with eigenvalue 0.960727463501



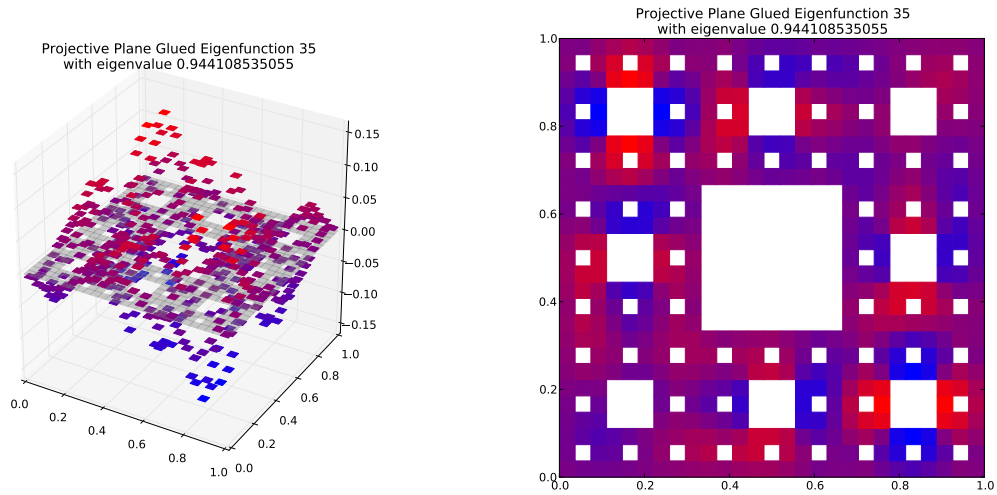
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.162961885183$   
Dot Value: 0.0022688734314310066

### 38 $M = 4$ Eigenfunction 37

$M = 4$  Eigenfunction 37 has eigenvalue 0.156972763305



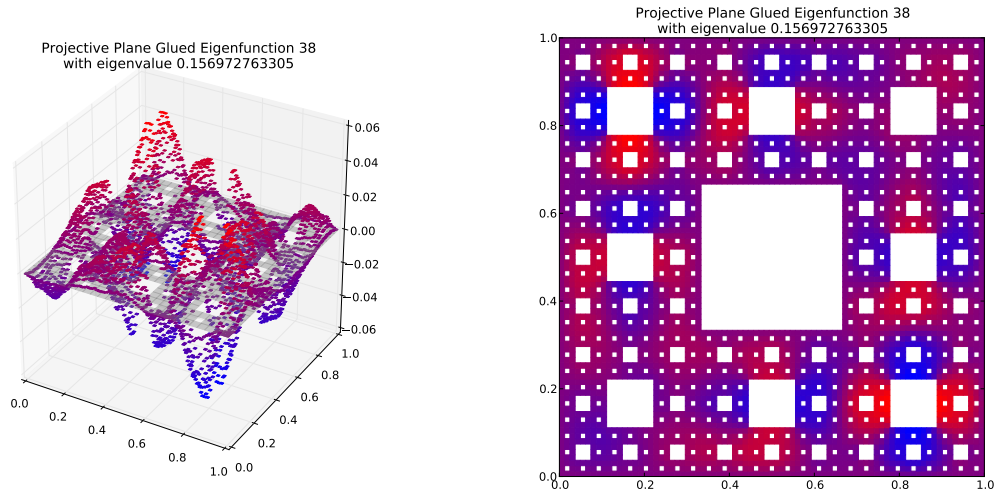
Compare to  $m = 3$  eigenspace with eigenvalue 0.944108535055  
(Note: Eigenspace Dimension  $> 1$ )



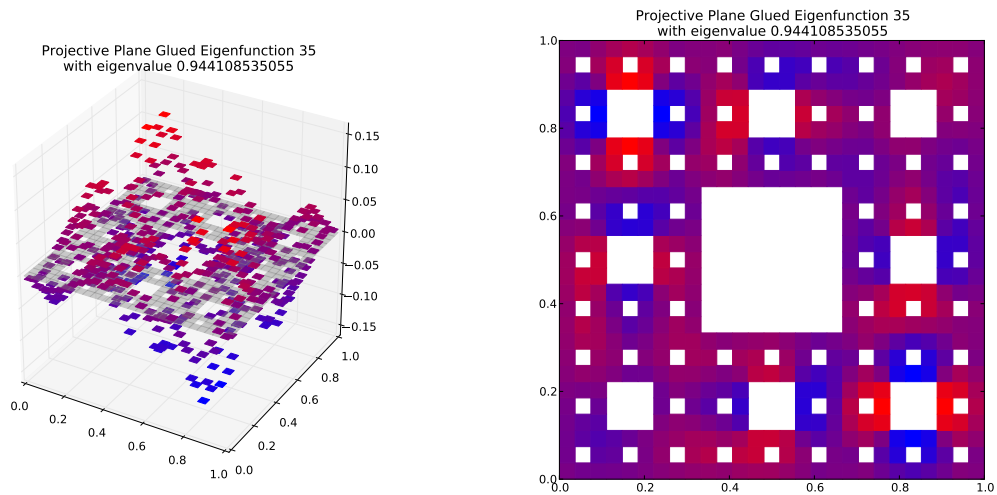
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166265590742$   
Dot Value: 0.0014782446148058348

### 39 $M = 4$ Eigenfunction 38

$M = 4$  Eigenfunction 38 has eigenvalue 0.156972763305



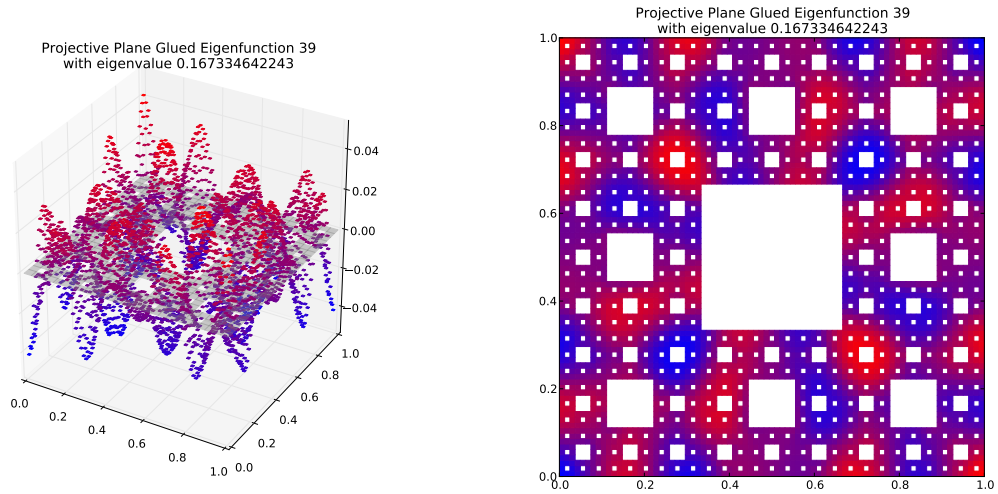
Compare to  $m = 3$  eigenspace with eigenvalue 0.944108535055  
(Note: Eigenspace Dimension  $> 1$ )



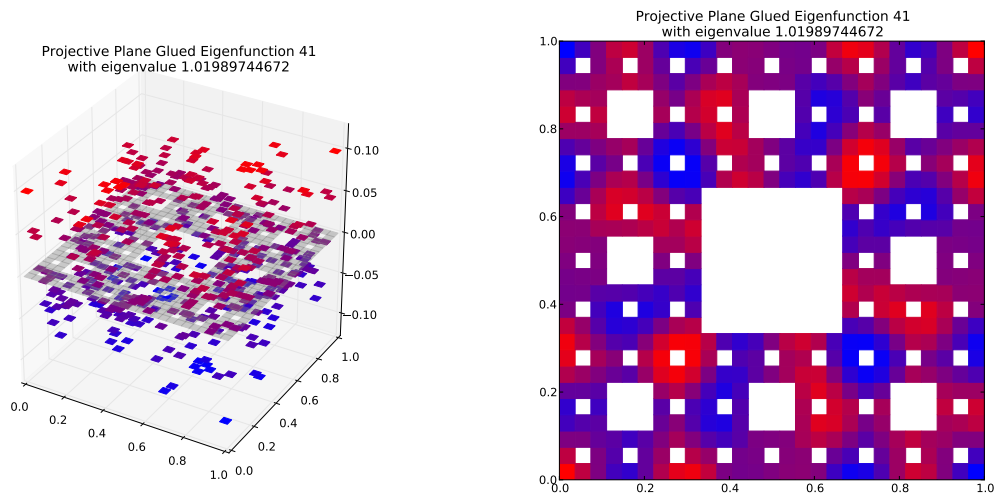
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166265590742$   
Dot Value: 0.0014782446148059458

## 40 $M = 4$ Eigenfunction 39

$M = 4$  Eigenfunction 39 has eigenvalue 0.167334642243



Compare to  $m = 3$  eigenspace with eigenvalue 1.01989744672

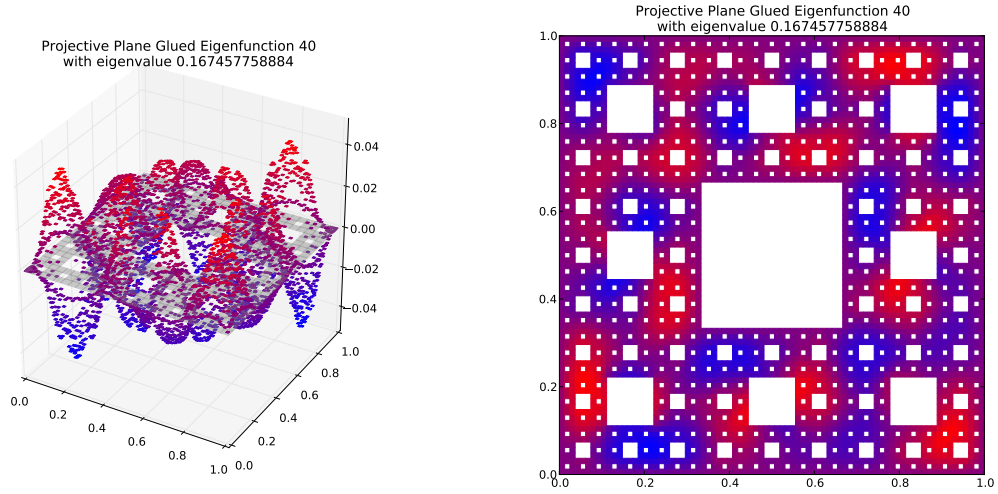


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.16407006683$

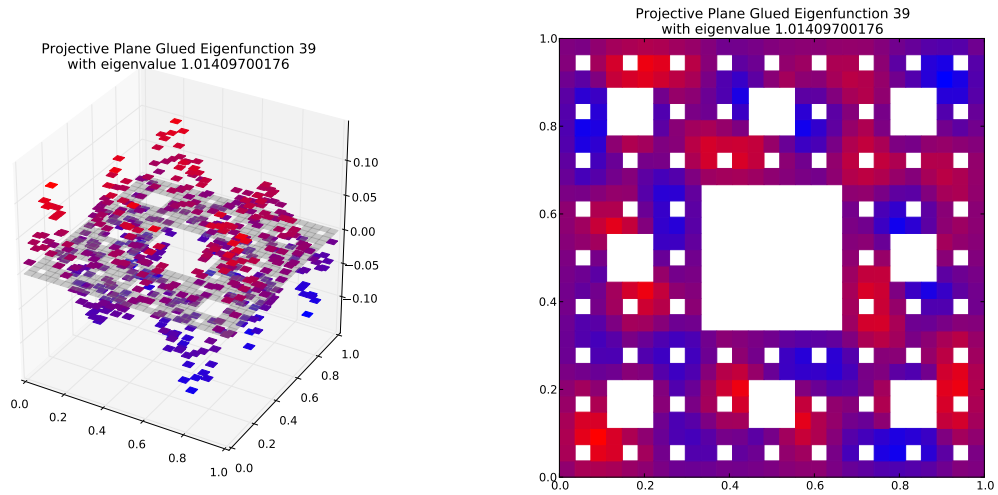
Dot Value: 0.0035524794665126036

# 41 $M = 4$ Eigenfunction 40

$M = 4$  Eigenfunction 40 has eigenvalue 0.167457758884



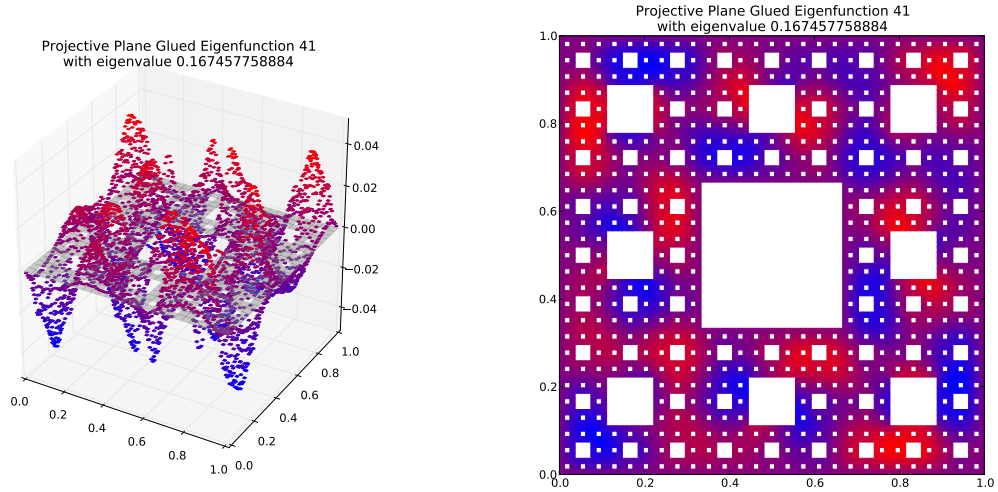
Compare to  $m = 3$  eigenspace with eigenvalue 1.01409700176  
(Note: Eigenspace Dimension  $> 1$ )



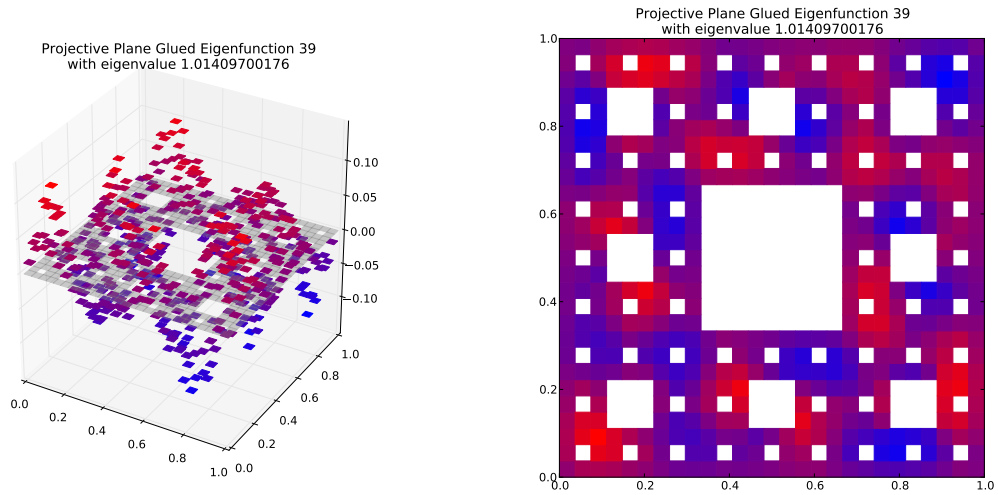
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165129922082$   
Dot Value: 0.003597122062774183

## 42 $M = 4$ Eigenfunction 41

$M = 4$  Eigenfunction 41 has eigenvalue 0.167457758884



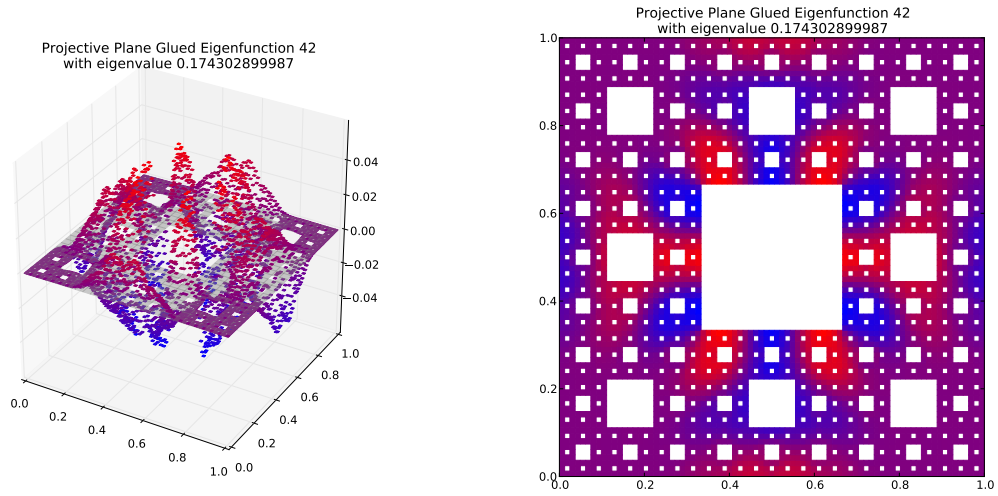
Compare to  $m = 3$  eigenspace with eigenvalue 1.01409700176  
(Note: Eigenspace Dimension  $> 1$ )



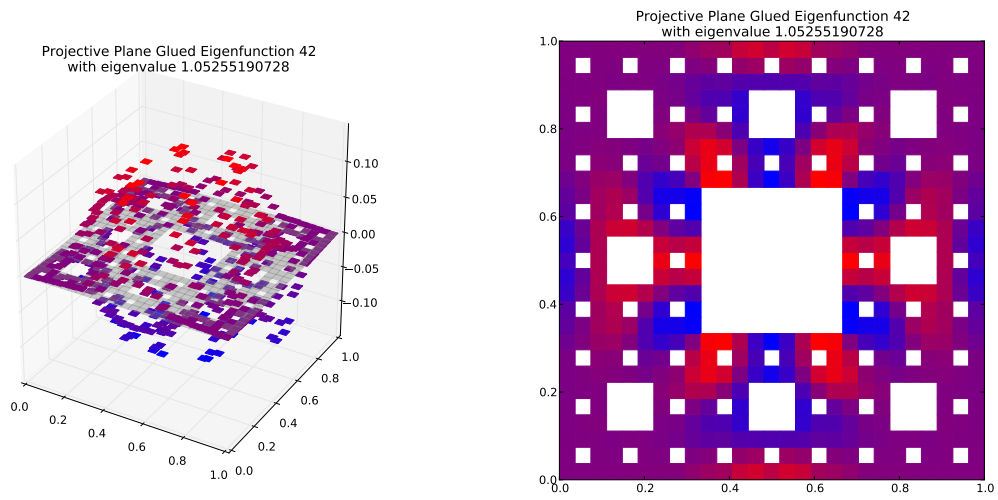
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165129922082$   
Dot Value: 0.003597122062775515

### 43 $M = 4$ Eigenfunction 42

$M = 4$  Eigenfunction 42 has eigenvalue 0.17430289987



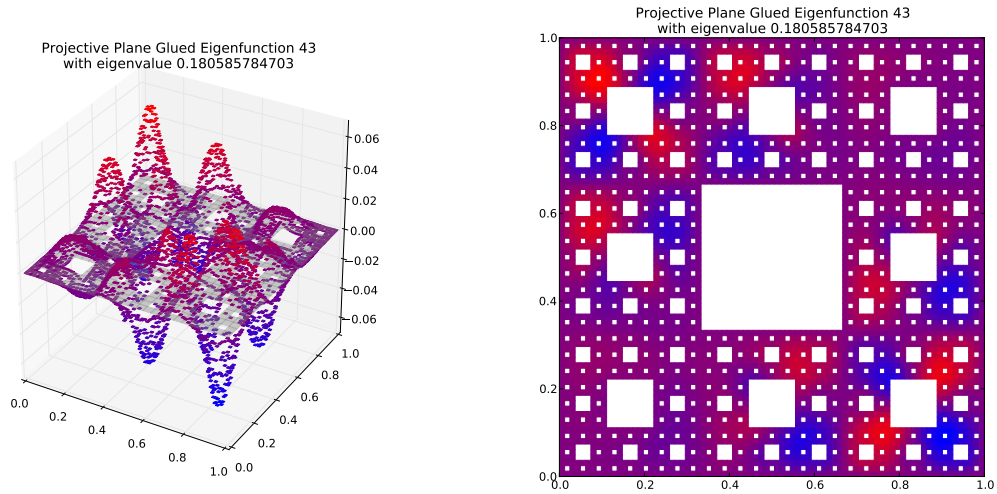
Compare to  $m = 3$  eigenspace with eigenvalue 1.05255190728



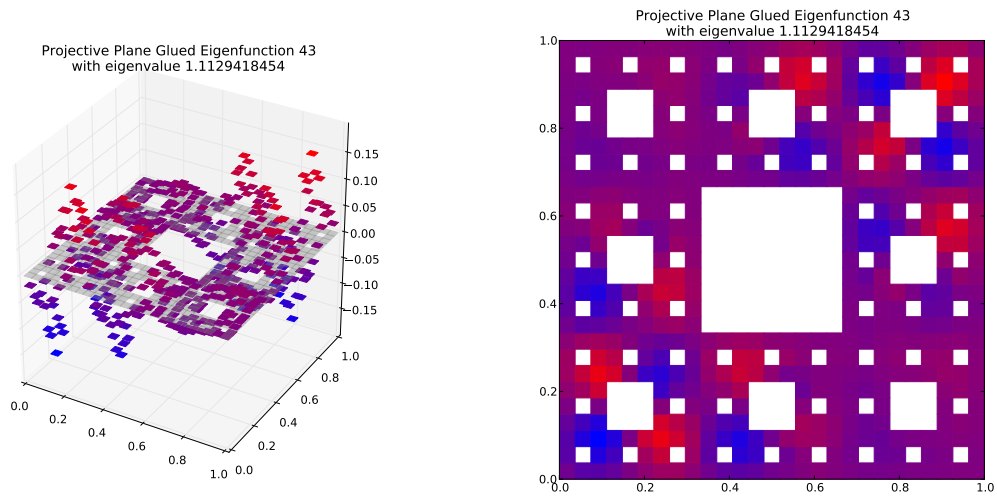
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165600288957$   
Dot Value: 0.004179961920588671

## 44 $M = 4$ Eigenfunction 43

$M = 4$  Eigenfunction 43 has eigenvalue 0.180585784703



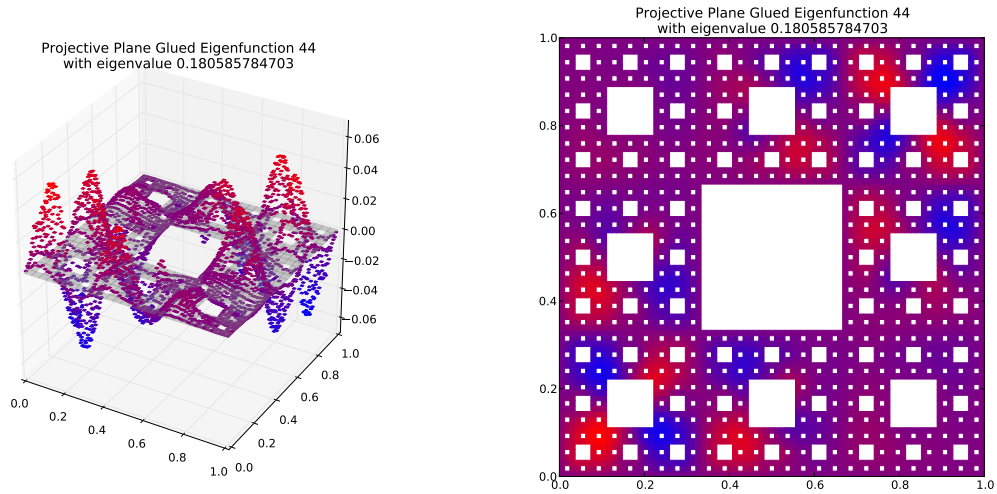
Compare to  $m = 3$  eigenspace with eigenvalue 1.1129418454  
(Note: Eigenspace Dimension  $> 1$ )



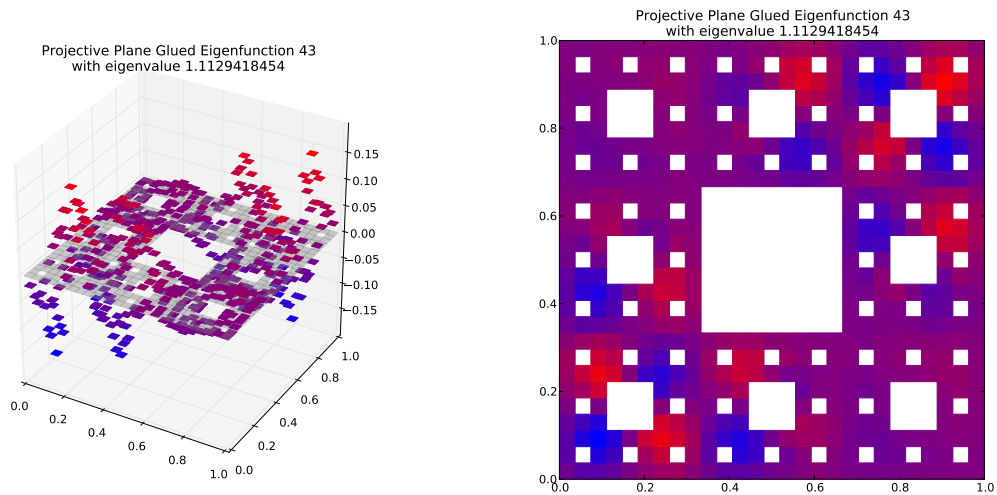
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.162259857017$   
Dot Value: 0.0025257542642251885

## 45 $M = 4$ Eigenfunction 44

$M = 4$  Eigenfunction 44 has eigenvalue 0.180585784703



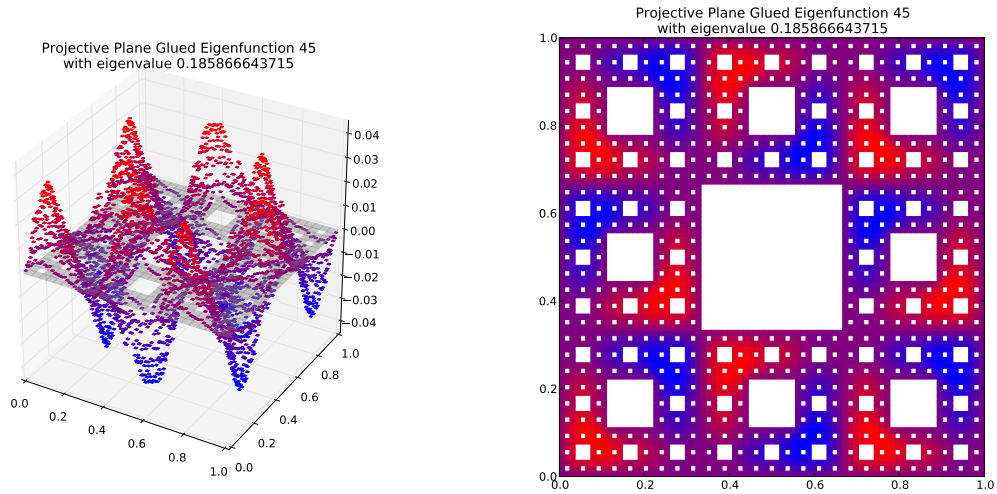
Compare to  $m = 3$  eigenspace with eigenvalue 1.1129418454  
(Note: Eigenspace Dimension  $> 1$ )



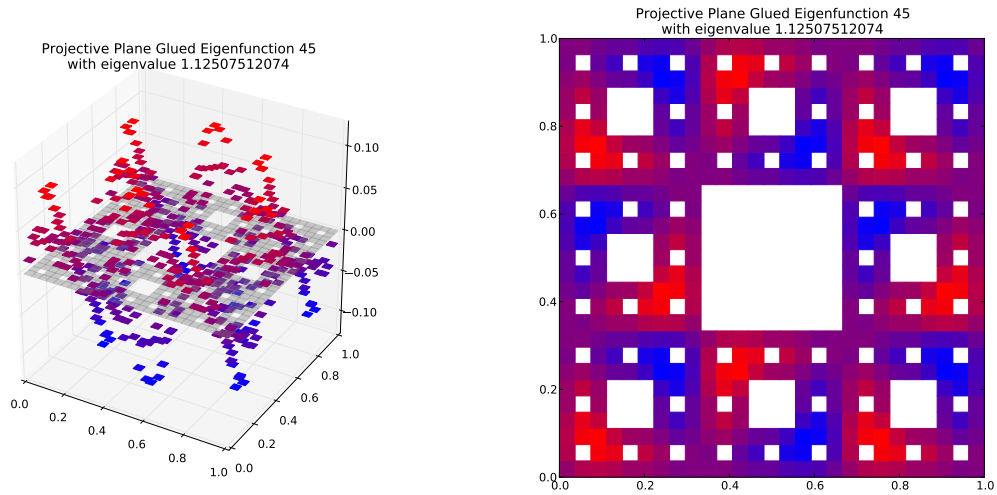
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.162259857017$   
Dot Value: 0.0025257542642262987

## 46 $M = 4$ Eigenfunction 45

$M = 4$  Eigenfunction 45 has eigenvalue 0.185866643715



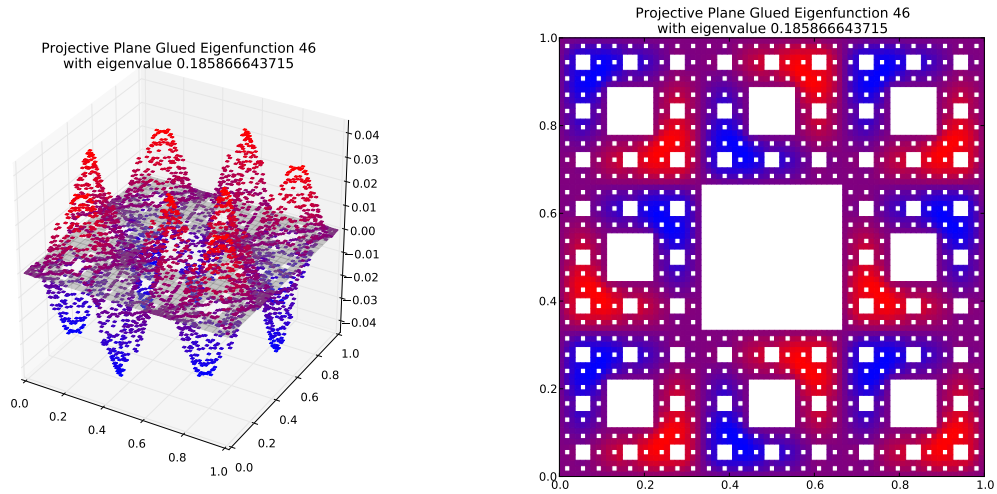
Compare to  $m = 3$  eigenspace with eigenvalue 1.12507512074  
(Note: Eigenspace Dimension  $> 1$ )



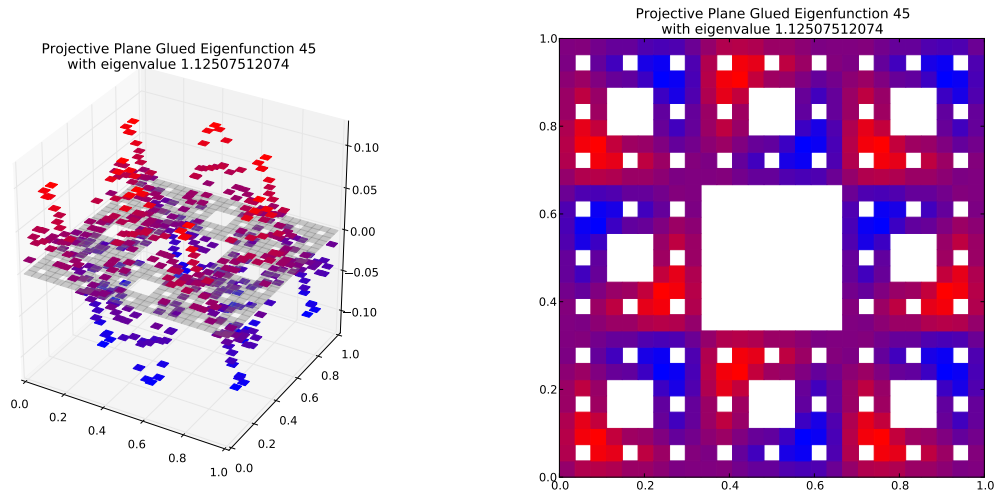
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165203763099$   
Dot Value: 0.0014332152551935762

## 47 $M = 4$ Eigenfunction 46

$M = 4$  Eigenfunction 46 has eigenvalue 0.185866643715



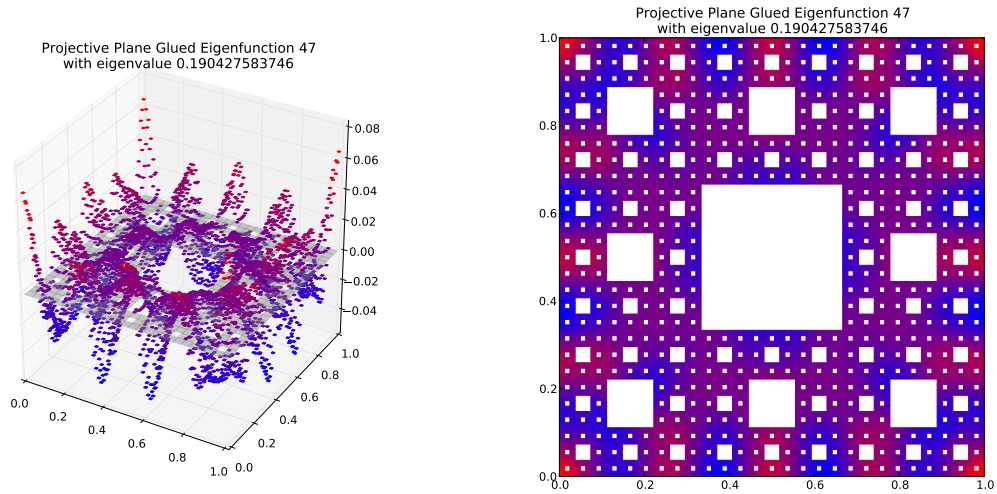
Compare to  $m = 3$  eigenspace with eigenvalue 1.12507512074  
(Note: Eigenspace Dimension  $> 1$ )



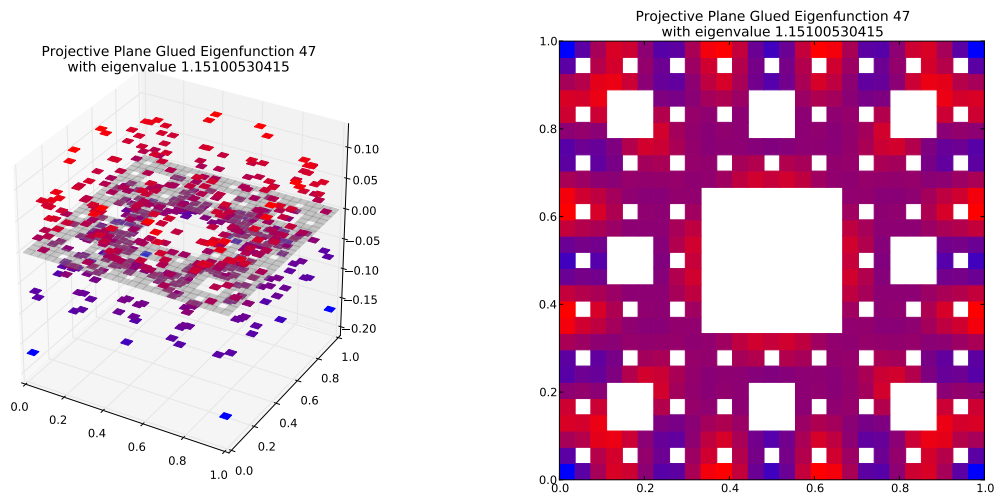
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165203763099$   
Dot Value: 0.0014332152551936872

## 48 $M = 4$ Eigenfunction 47

$M = 4$  Eigenfunction 47 has eigenvalue 0.190427583746



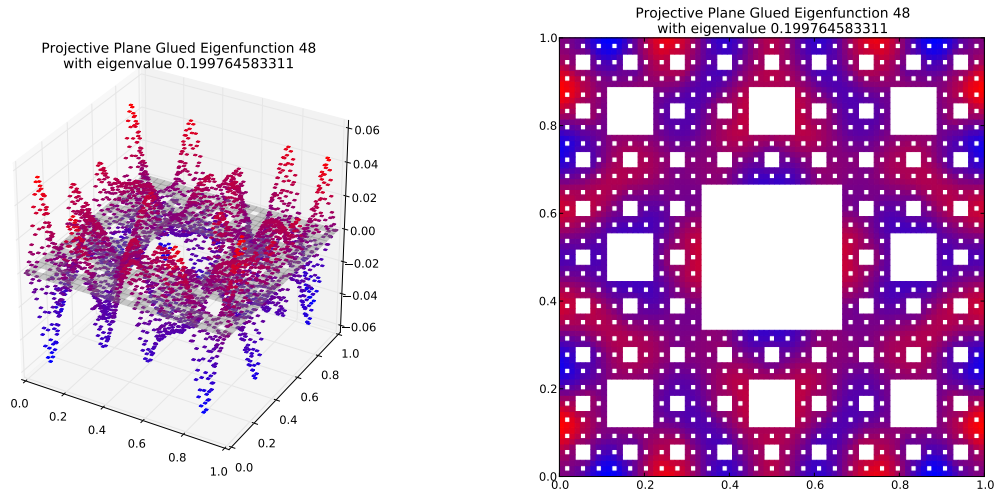
Compare to  $m = 3$  eigenspace with eigenvalue 1.15100530415



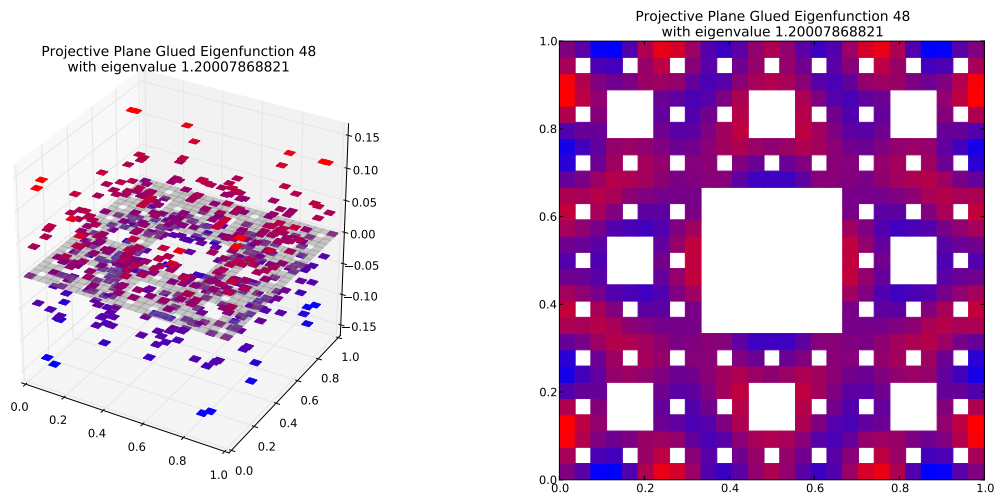
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165444575328$   
Dot Value: 0.004870754426623658

## 49 $M = 4$ Eigenfunction 48

$M = 4$  Eigenfunction 48 has eigenvalue 0.199764583311



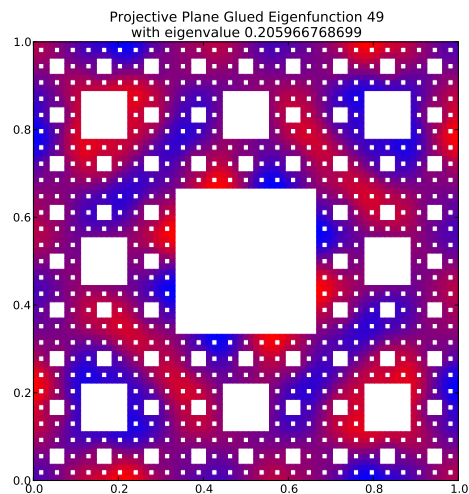
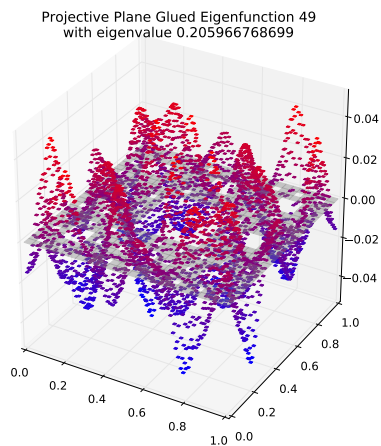
Compare to  $m = 3$  eigenspace with eigenvalue 1.20007868821



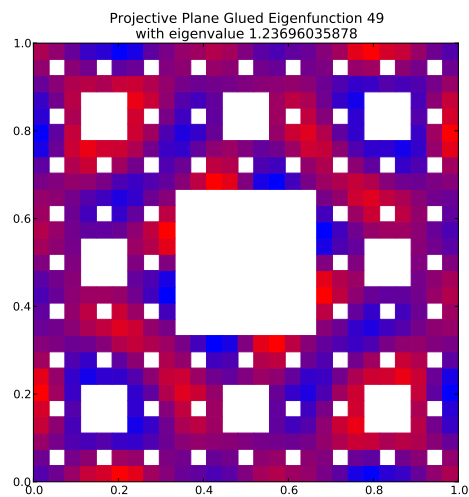
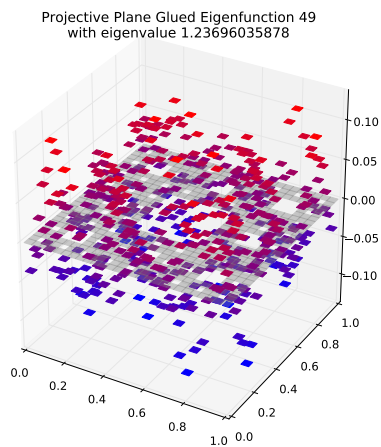
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166459570755$   
Dot Value: 0.006081335873622362

## 50 $M = 4$ Eigenfunction 49

$M = 4$  Eigenfunction 49 has eigenvalue 0.205966768699



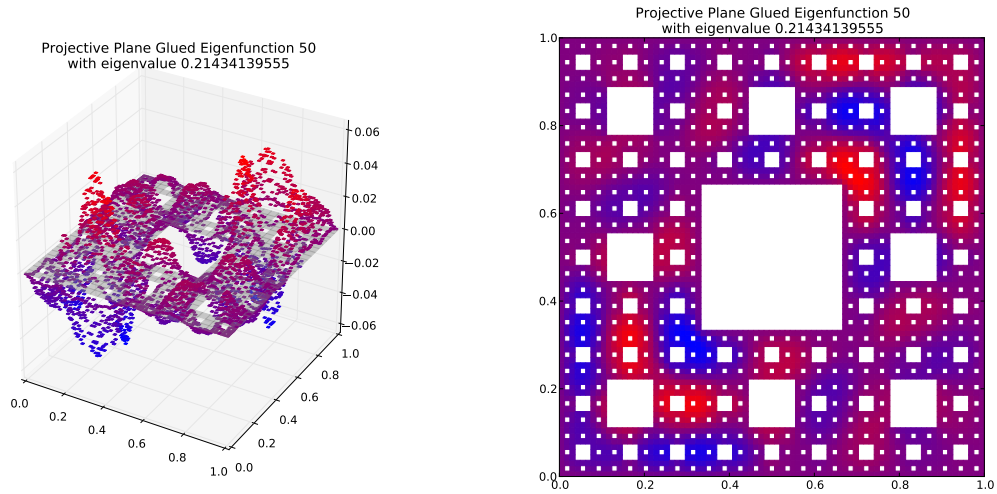
Compare to  $m = 3$  eigenspace with eigenvalue 1.23696035878



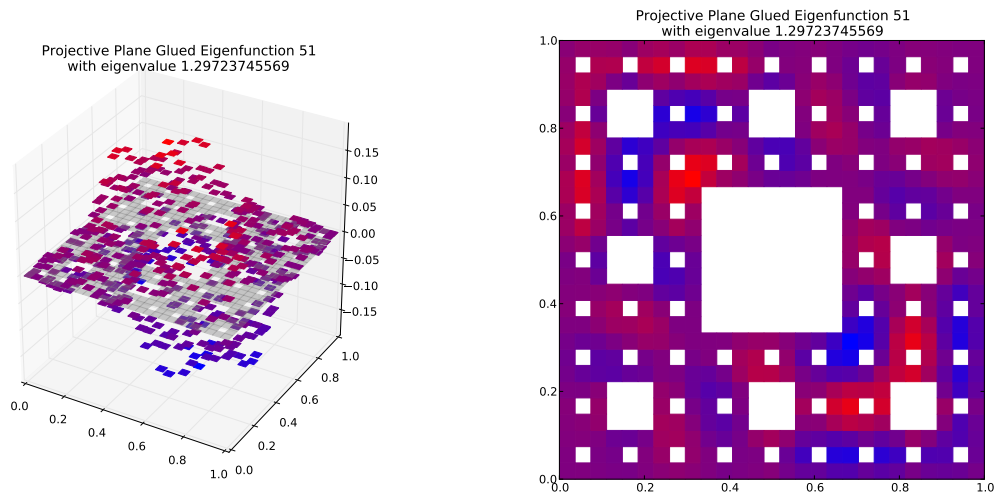
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166510403698$   
Dot Value: 0.004266017320709525

## 51 $M = 4$ Eigenfunction 50

$M = 4$  Eigenfunction 50 has eigenvalue 0.21434139555



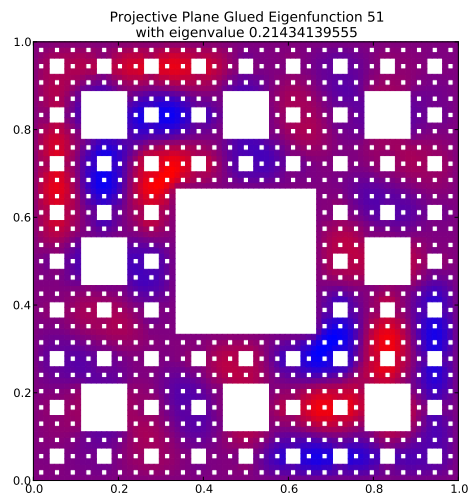
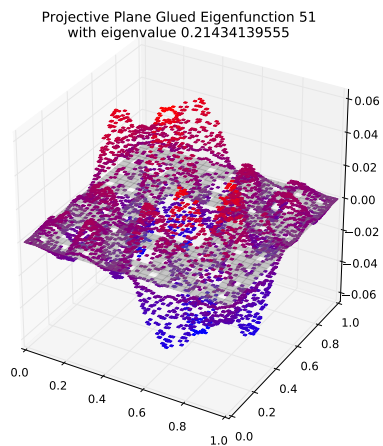
Compare to  $m = 3$  eigenspace with eigenvalue 1.29723745569  
(Note: Eigenspace Dimension  $> 1$ )



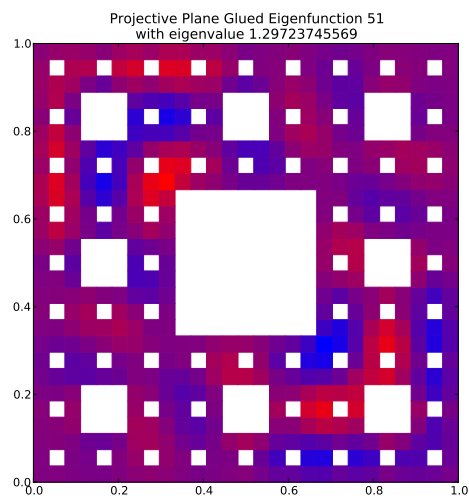
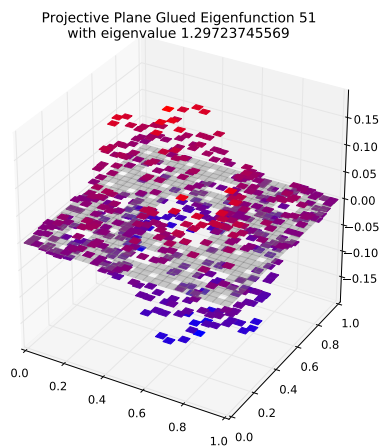
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165229114076$   
Dot Value: 0.0041323137165796275

## 52 $M = 4$ Eigenfunction 51

$M = 4$  Eigenfunction 51 has eigenvalue 0.21434139555



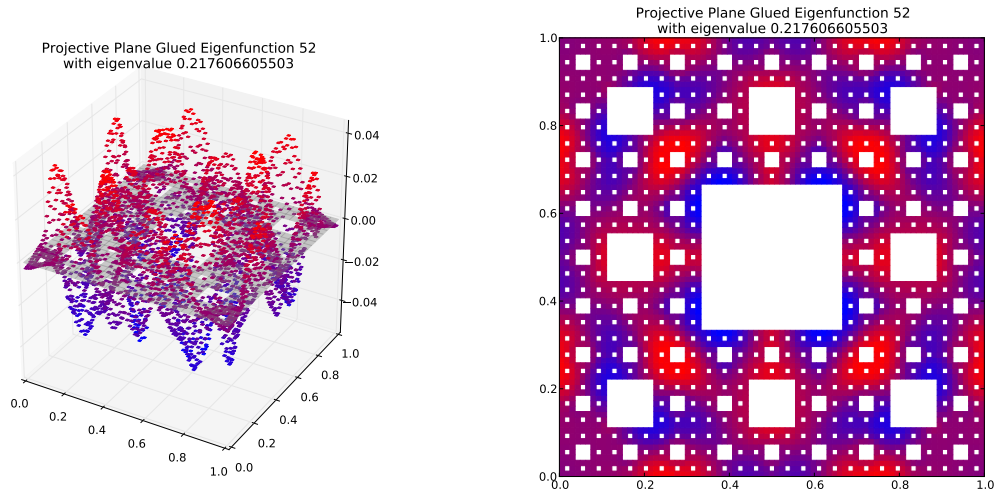
Compare to  $m = 3$  eigenspace with eigenvalue 1.29723745569  
(Note: Eigenspace Dimension  $> 1$ )



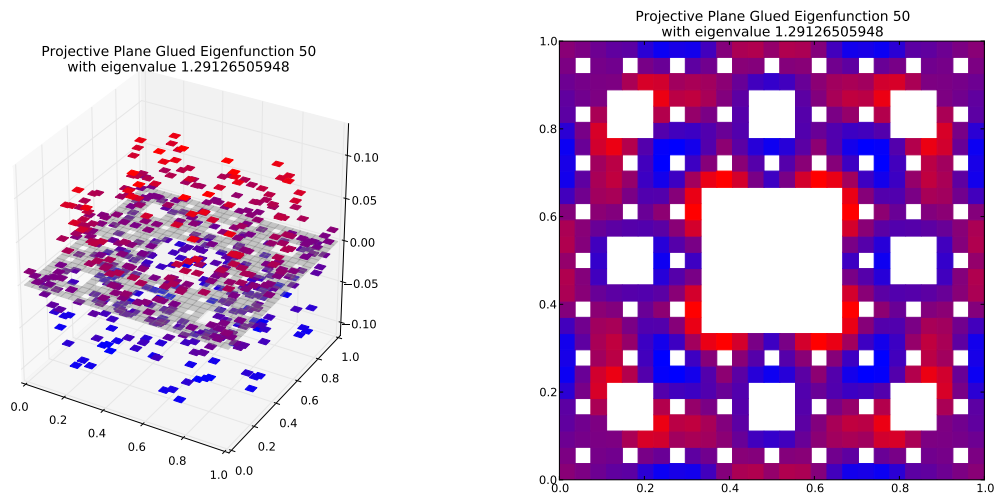
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165229114076$   
Dot Value: 0.004132313716579072

### 53 $M = 4$ Eigenfunction 52

$M = 4$  Eigenfunction 52 has eigenvalue 0.217606605503



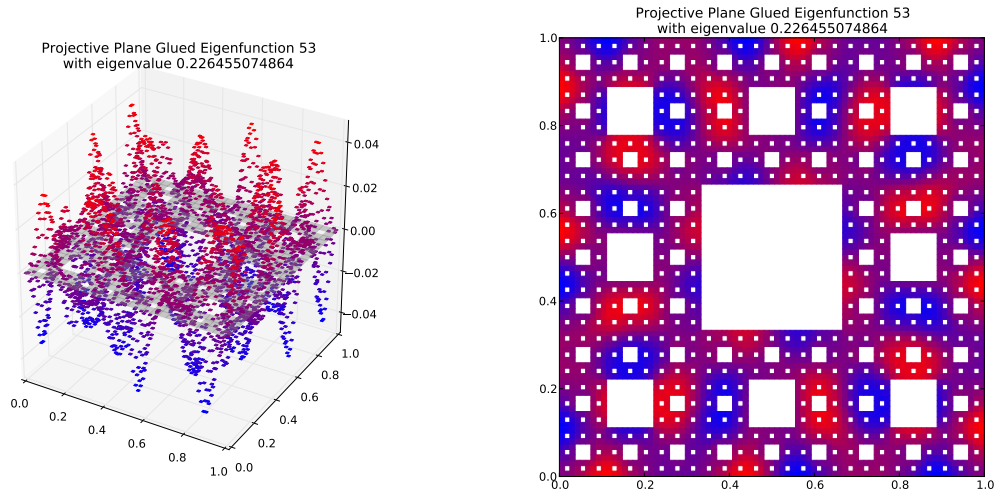
Compare to  $m = 3$  eigenspace with eigenvalue 1.29126505948



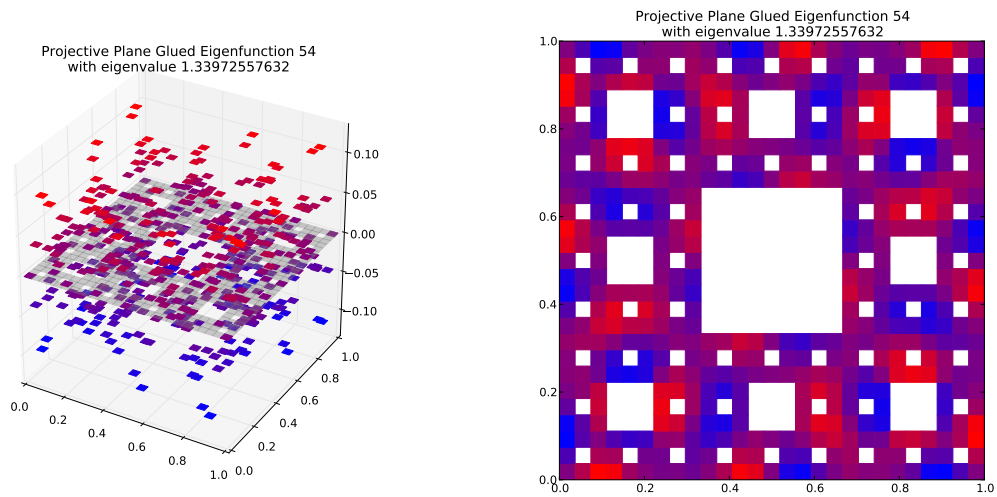
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168522027221$   
Dot Value: 0.007103347906352586

## 54 $M = 4$ Eigenfunction 53

$M = 4$  Eigenfunction 53 has eigenvalue 0.226455074864



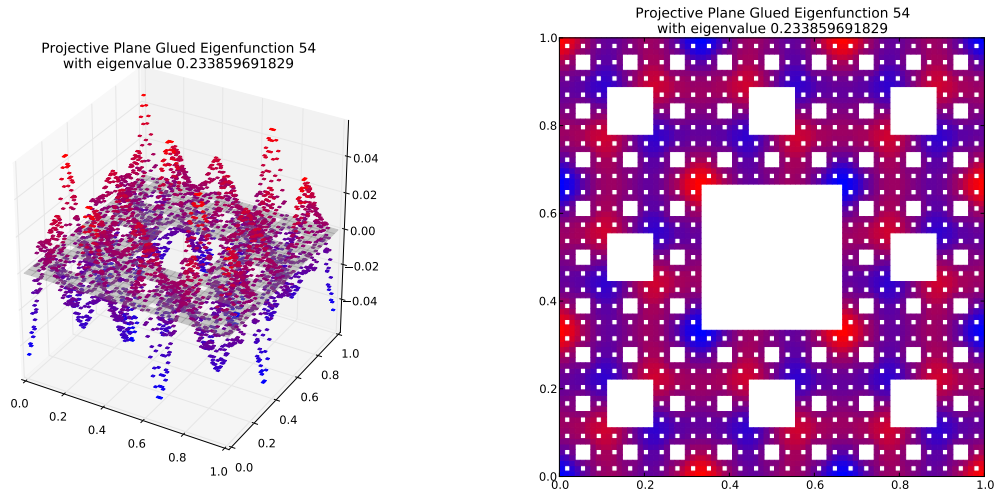
Compare to  $m = 3$  eigenspace with eigenvalue 1.33972557632



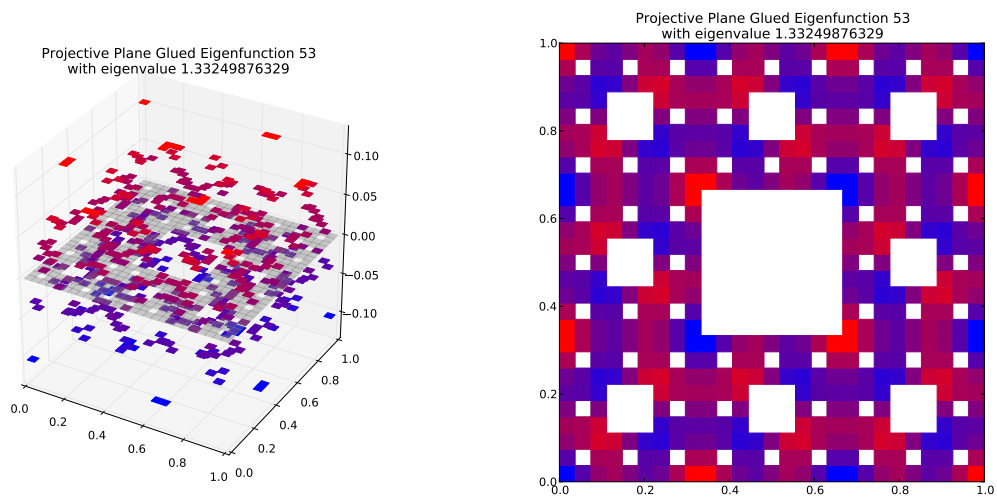
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.169030941013$   
Dot Value: 0.010800152274692443

## 55 $M = 4$ Eigenfunction 54

$M = 4$  Eigenfunction 54 has eigenvalue 0.233859691829



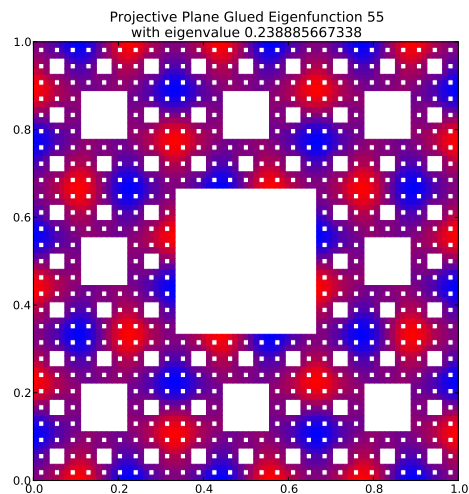
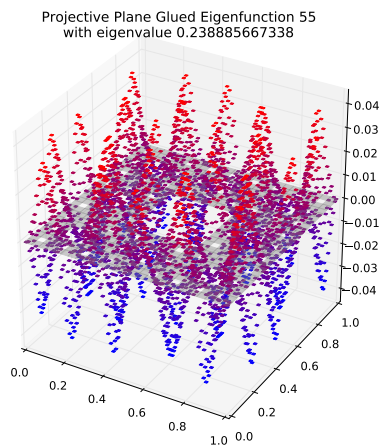
Compare to  $m = 3$  eigenspace with eigenvalue 1.33249876329



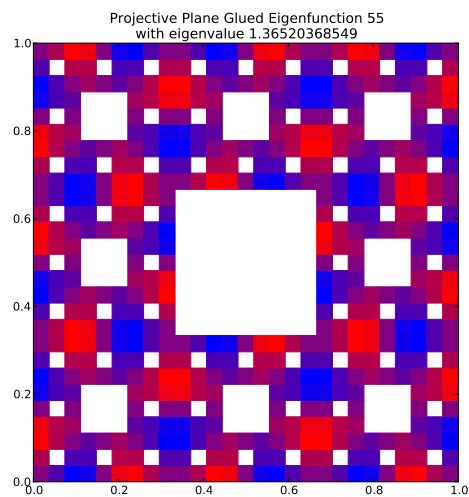
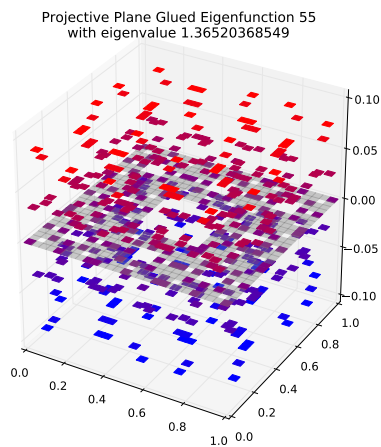
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.175504622047$   
Dot Value: 0.00032834577856177827

## 56 $M = 4$ Eigenfunction 55

$M = 4$  Eigenfunction 55 has eigenvalue 0.238885667338



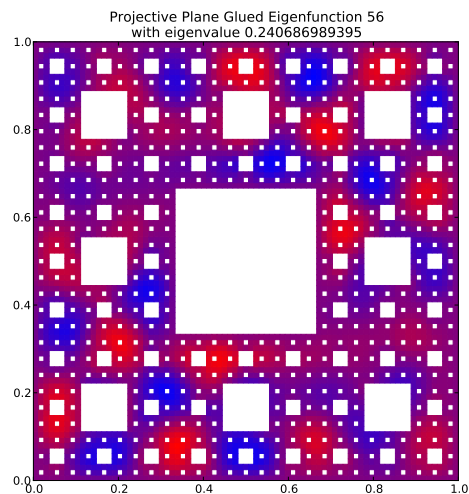
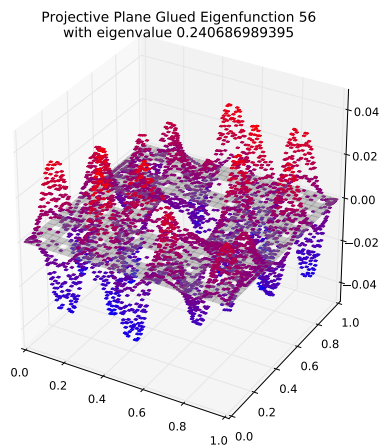
Compare to  $m = 3$  eigenspace with eigenvalue 1.36520368549



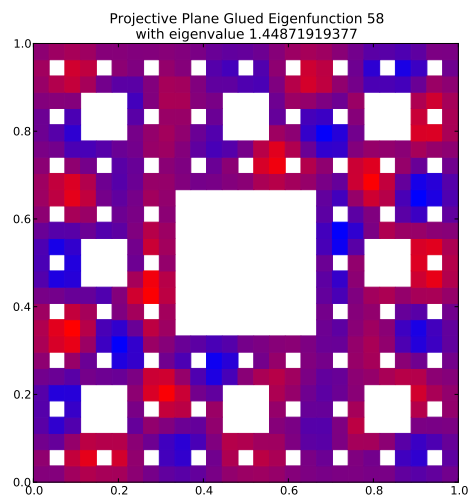
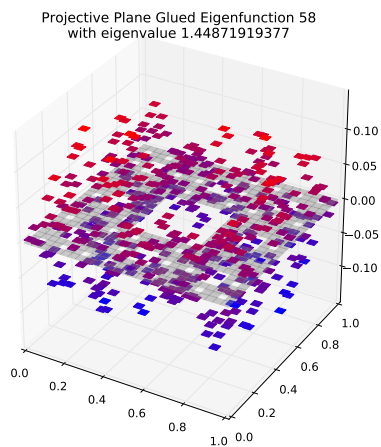
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174981704106$   
Dot Value: 0.0024135566193830282

## 57 $M = 4$ Eigenfunction 56

$M = 4$  Eigenfunction 56 has eigenvalue 0.240686989395



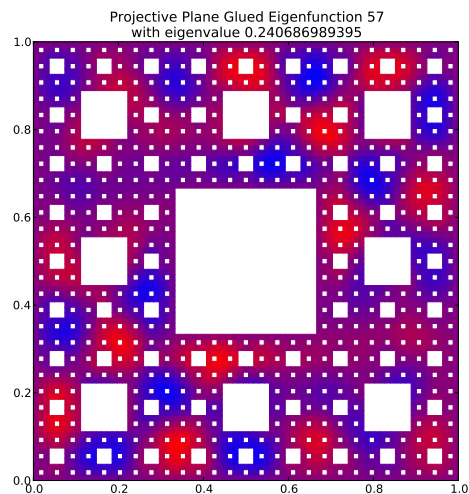
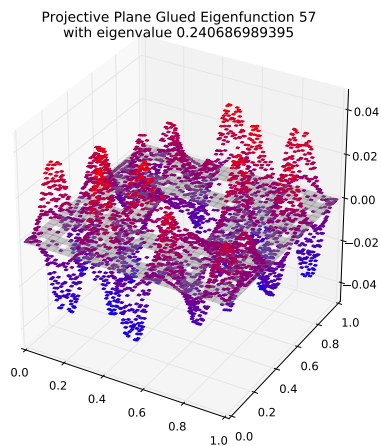
Compare to  $m = 3$  eigenspace with eigenvalue 1.44871919377  
(Note: Eigenspace Dimension  $> 1$ )



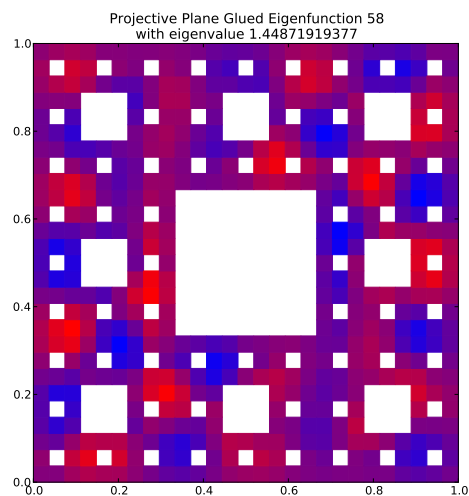
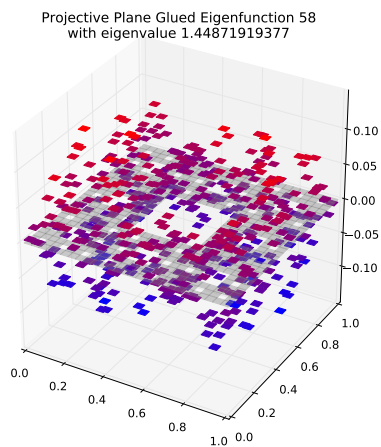
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166137779102$   
Dot Value: 0.00751674575894401

## 58 $M = 4$ Eigenfunction 57

$M = 4$  Eigenfunction 57 has eigenvalue 0.240686989395



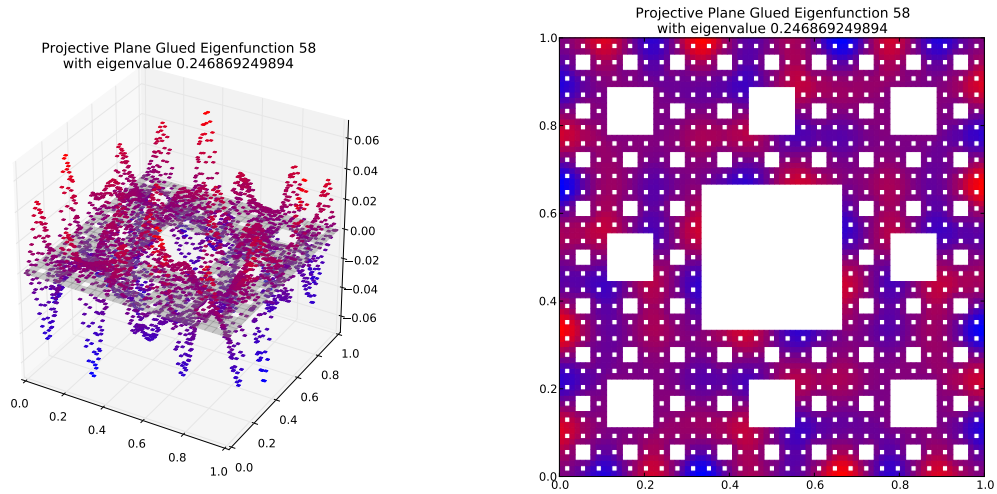
Compare to  $m = 3$  eigenspace with eigenvalue 1.44871919377  
(Note: Eigenspace Dimension  $> 1$ )



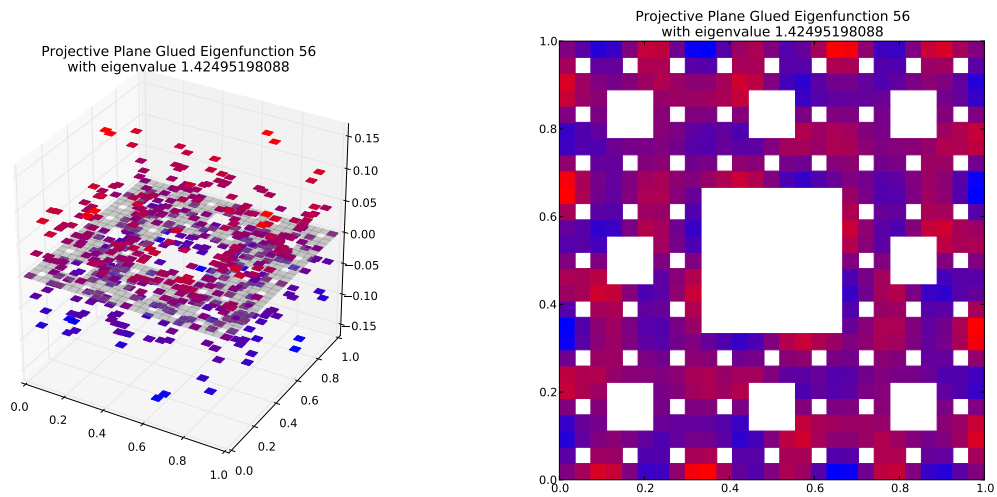
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.166137779102$   
Dot Value: 0.007516745758944232

## 59 $M = 4$ Eigenfunction 58

$M = 4$  Eigenfunction 58 has eigenvalue 0.246869249894



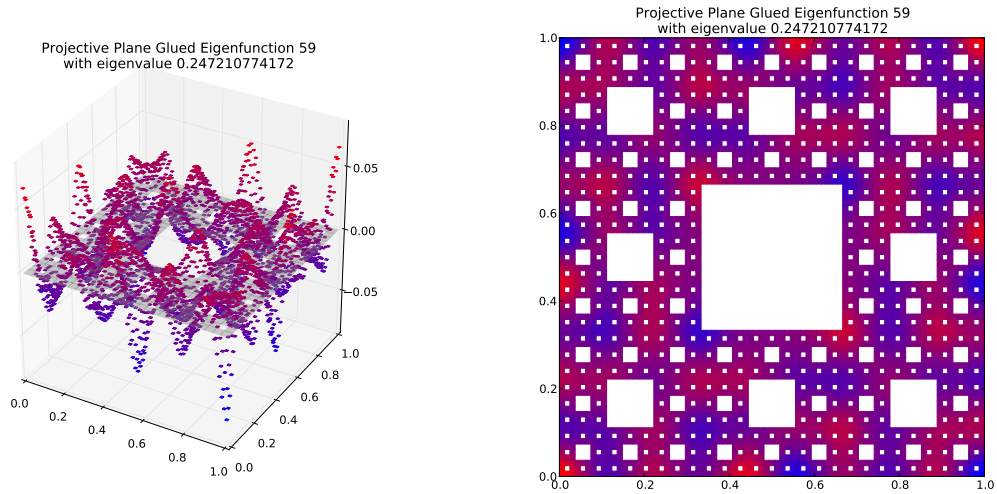
Compare to  $m = 3$  eigenspace with eigenvalue 1.42495198088



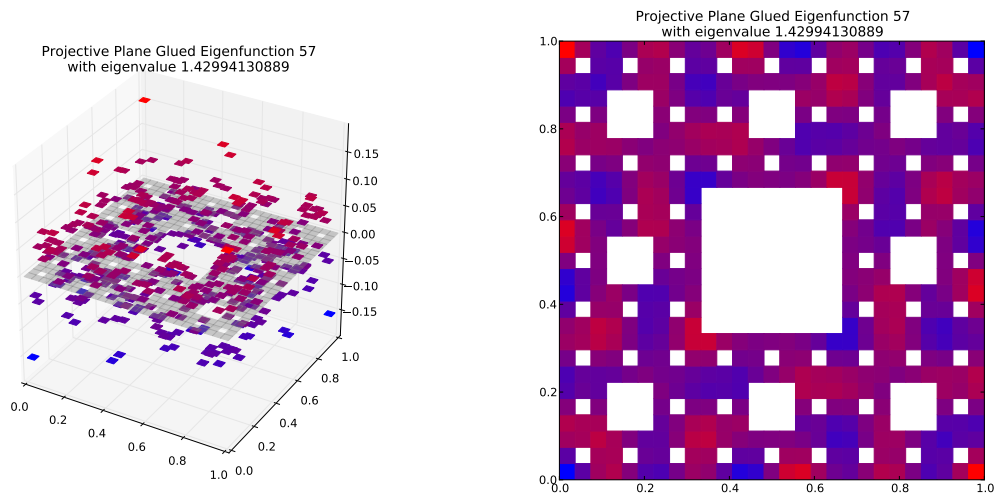
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.173247416899$   
Dot Value: 0.007409271598425082

## 60 $M = 4$ Eigenfunction 59

$M = 4$  Eigenfunction 59 has eigenvalue 0.247210774172



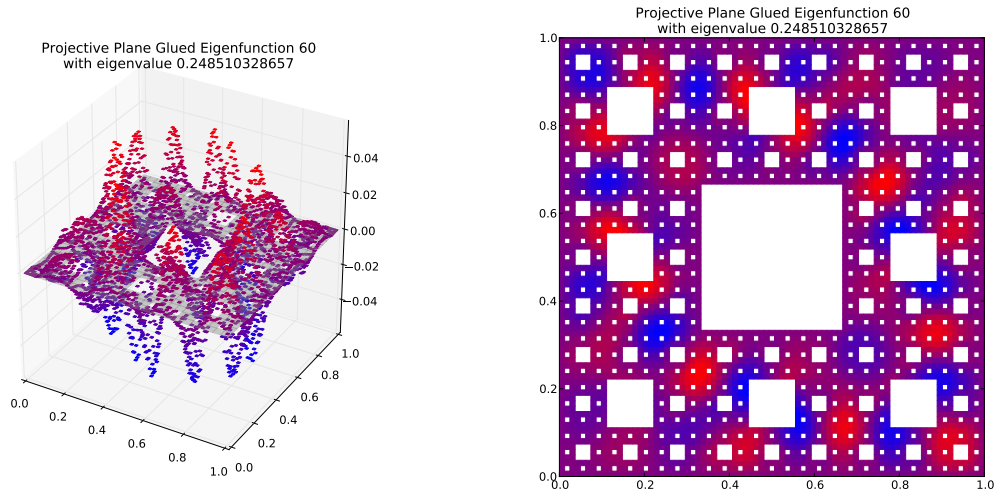
Compare to  $m = 3$  eigenspace with eigenvalue 1.42994130889



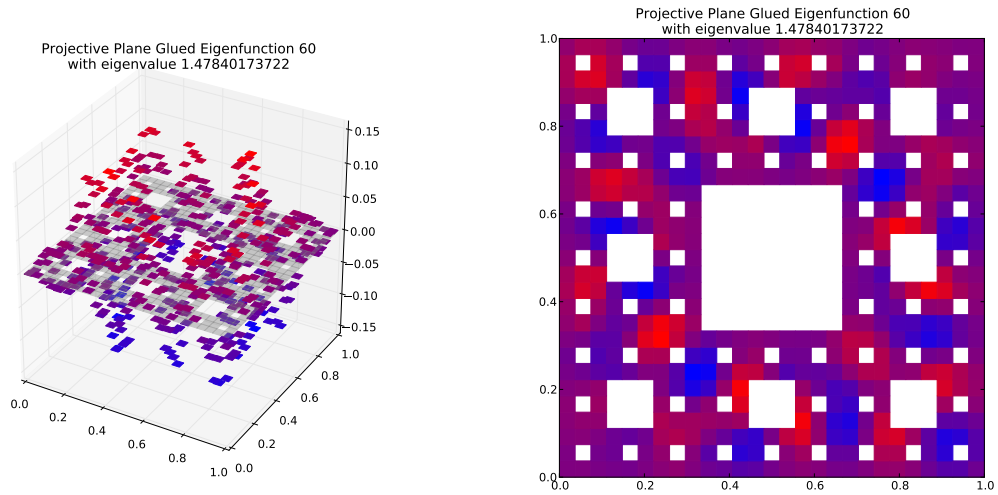
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.172881762794$   
Dot Value: 0.007915762981241525

## 61 $M = 4$ Eigenfunction 60

$M = 4$  Eigenfunction 60 has eigenvalue 0.248510328657



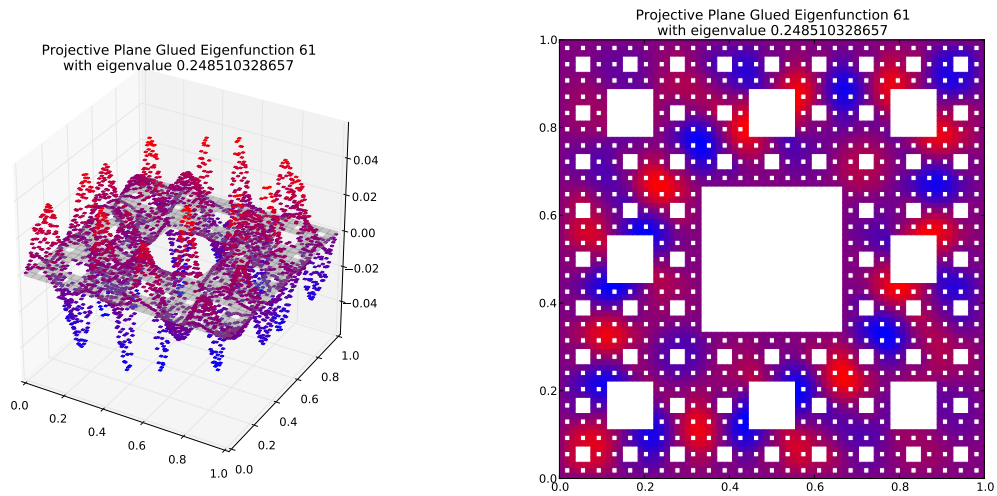
Compare to  $m = 3$  eigenspace with eigenvalue 1.47840173722  
(Note: Eigenspace Dimension  $> 1$ )



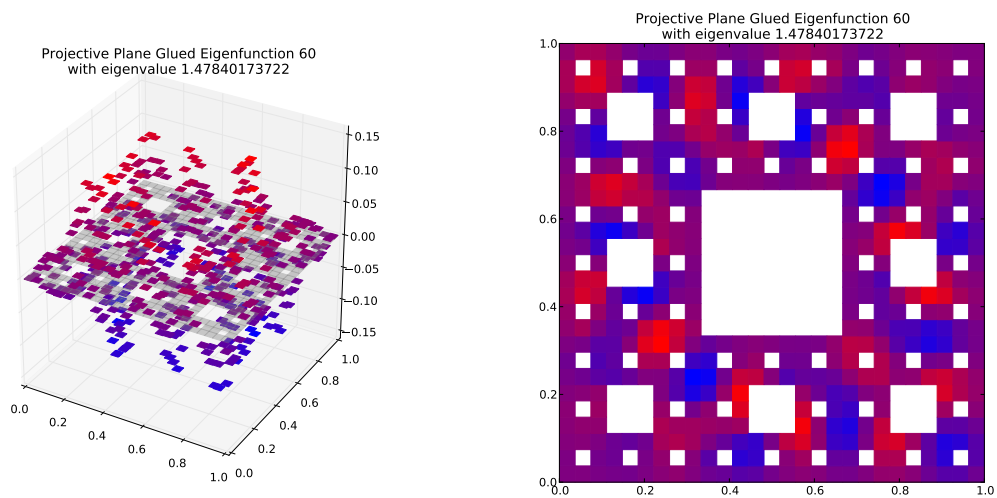
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168093910065$   
Dot Value: 0.018688832969823488

## 62 $M = 4$ Eigenfunction 61

$M = 4$  Eigenfunction 61 has eigenvalue 0.248510328657



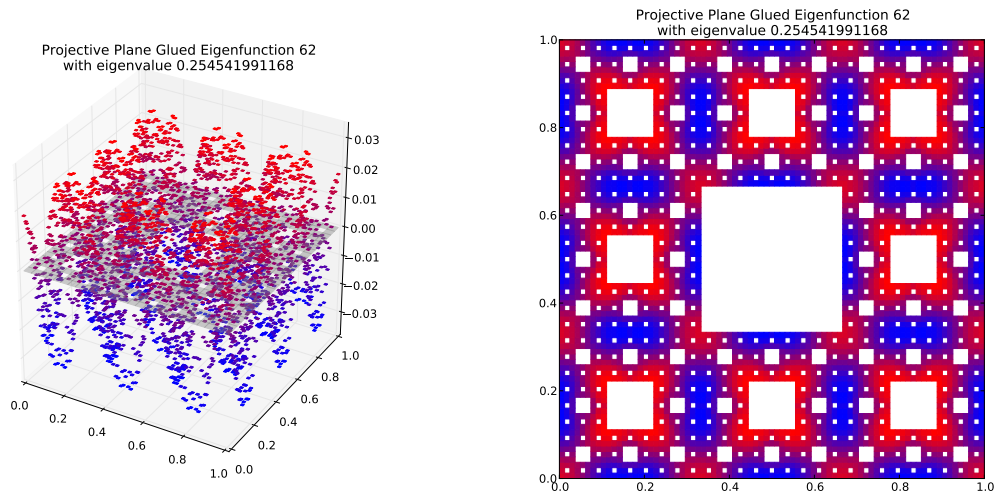
Compare to  $m = 3$  eigenspace with eigenvalue 1.47840173722  
(Note: Eigenspace Dimension  $> 1$ )



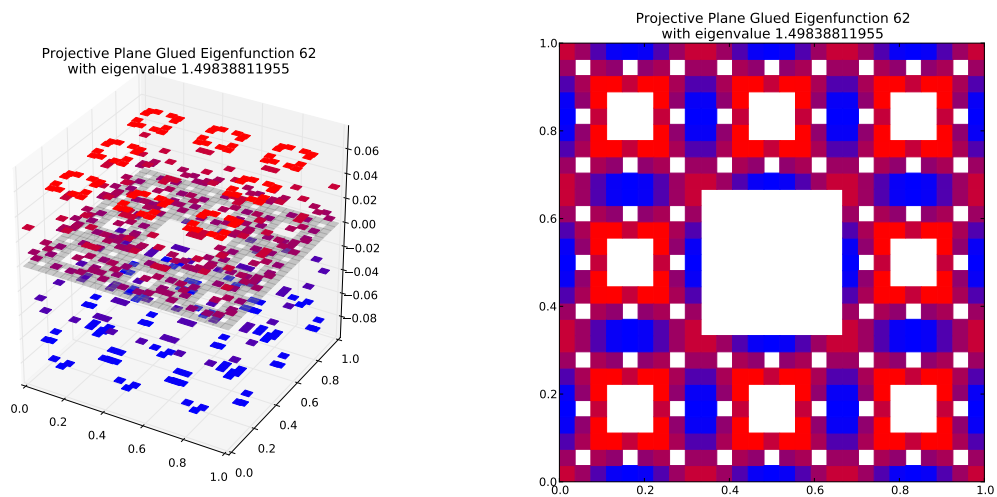
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168093910065$   
Dot Value: 0.01868883296982038

## 63 $M = 4$ Eigenfunction 62

$M = 4$  Eigenfunction 62 has eigenvalue 0.254541991168



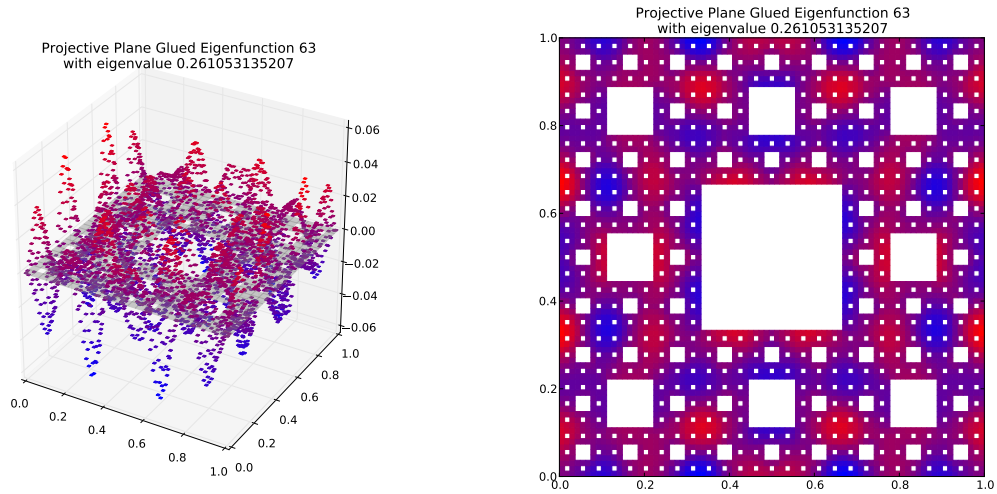
Compare to  $m = 3$  eigenspace with eigenvalue 1.49838811955



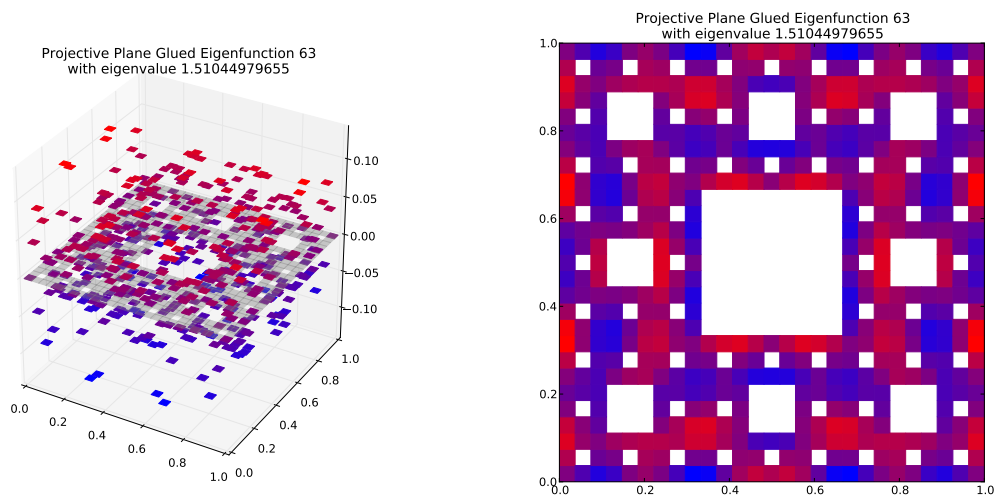
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.169877208613$   
Dot Value: 0.011862172098635604

## 64 $M = 4$ Eigenfunction 63

$M = 4$  Eigenfunction 63 has eigenvalue 0.261053135207



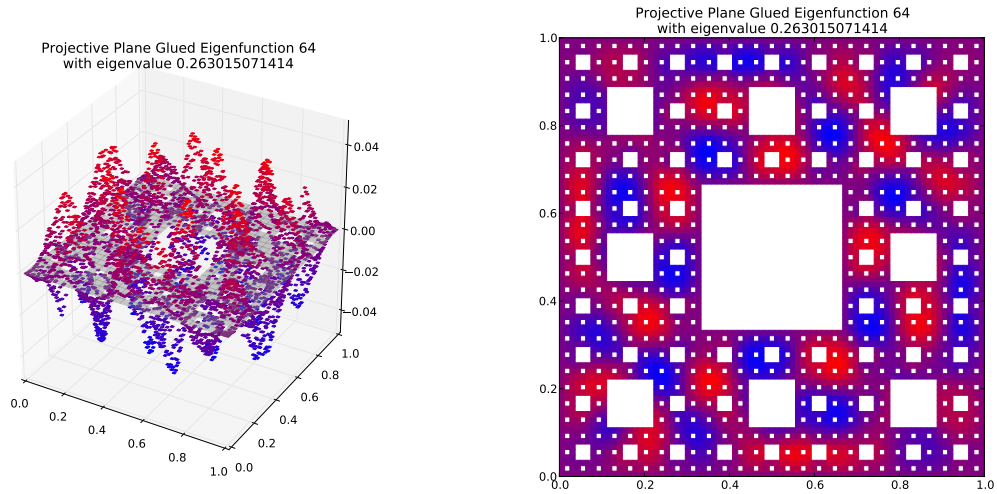
Compare to  $m = 3$  eigenspace with eigenvalue 1.51044979655



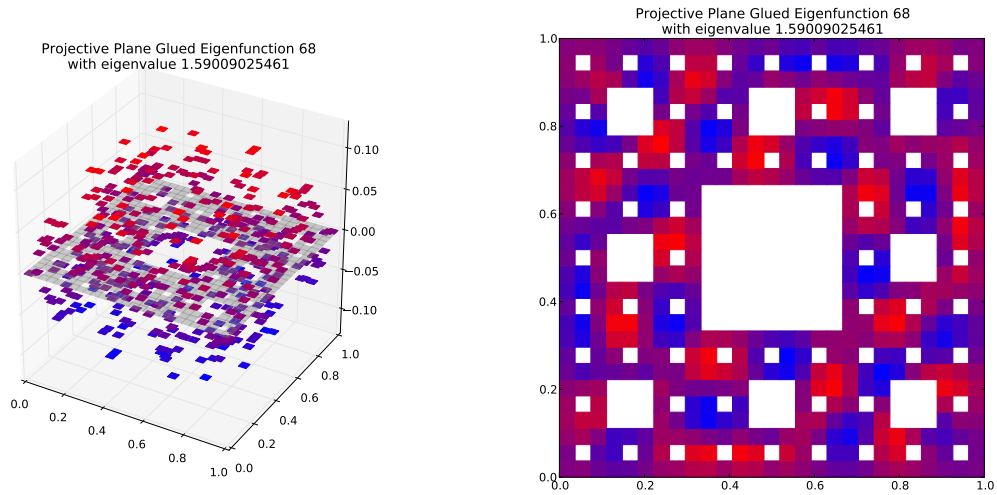
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.172831388242$   
Dot Value: 0.013529887974388366

## 65 $M = 4$ Eigenfunction 64

$M = 4$  Eigenfunction 64 has eigenvalue 0.263015071414



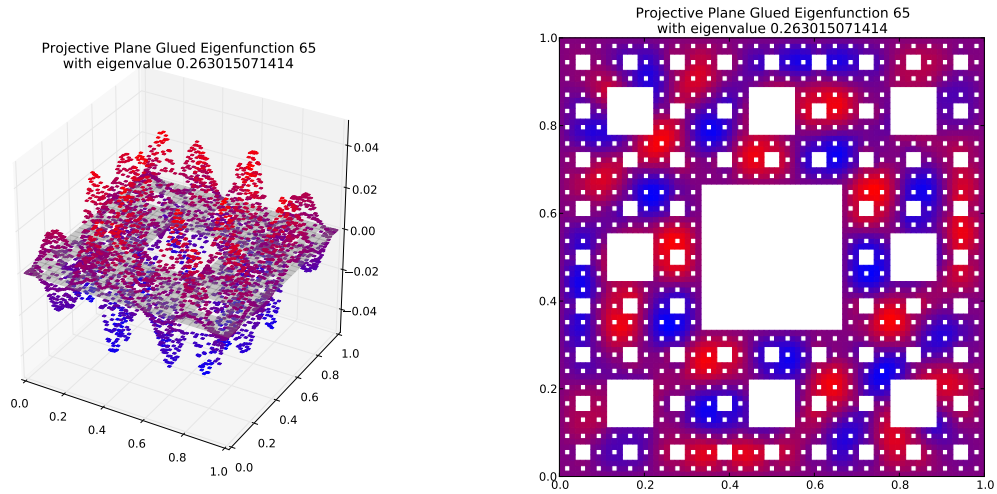
Compare to  $m = 3$  eigenspace with eigenvalue 1.59009025461  
(Note: Eigenspace Dimension  $> 1$ )



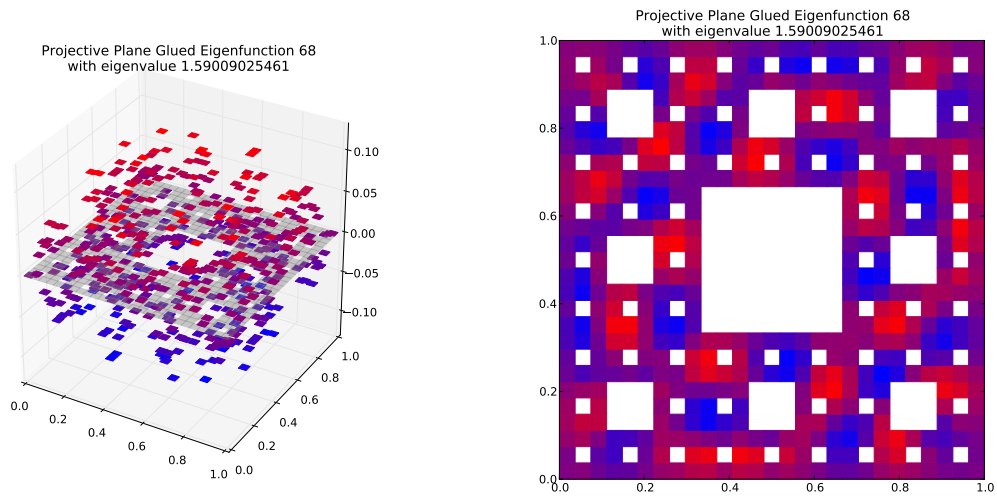
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165408894653$   
Dot Value: 0.012129980463191137

## 66 $M = 4$ Eigenfunction 65

$M = 4$  Eigenfunction 65 has eigenvalue 0.263015071414



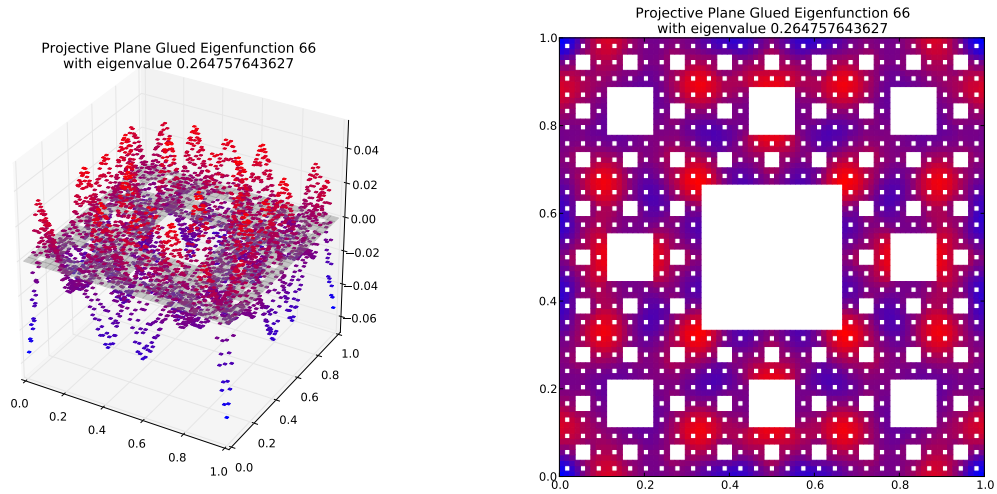
Compare to  $m = 3$  eigenspace with eigenvalue 1.59009025461  
(Note: Eigenspace Dimension  $> 1$ )



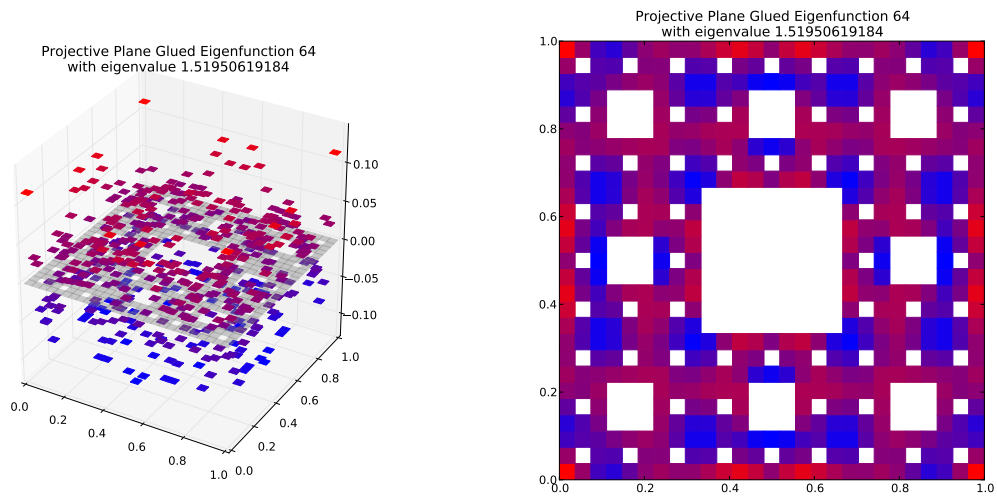
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.165408894653$   
Dot Value: 0.012129980463189693

## 67 $M = 4$ Eigenfunction 66

$M = 4$  Eigenfunction 66 has eigenvalue 0.264757643627



Compare to  $m = 3$  eigenspace with eigenvalue 1.51950619184

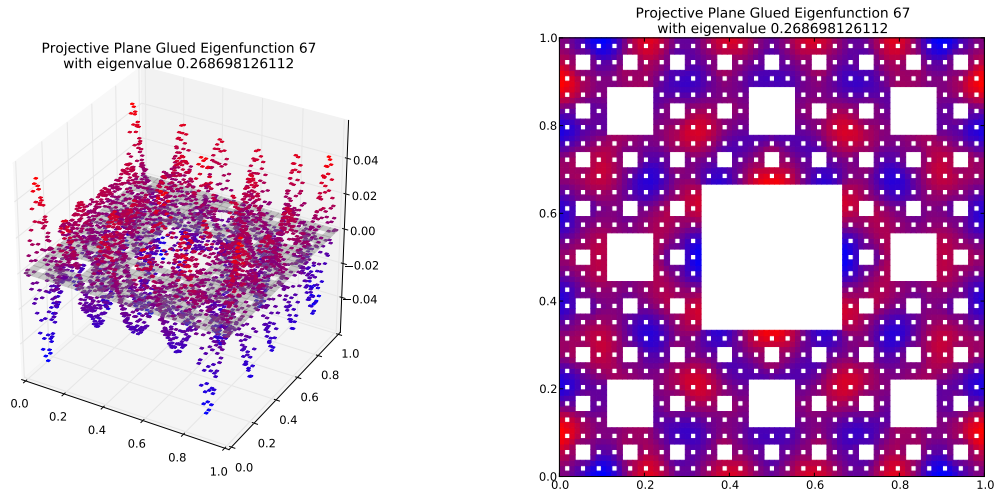


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174239266051$

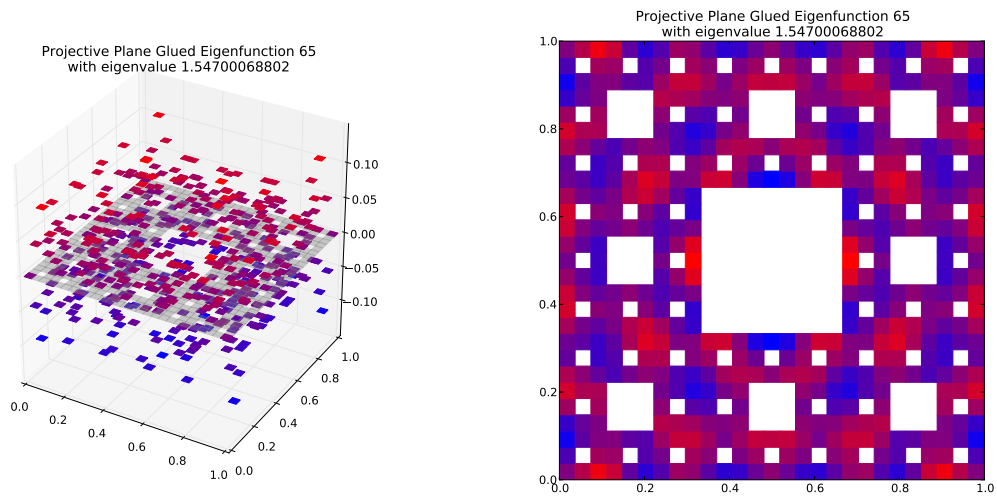
Dot Value: 0.026996307228455696

## 68 $M = 4$ Eigenfunction 67

$M = 4$  Eigenfunction 67 has eigenvalue 0.268698126112



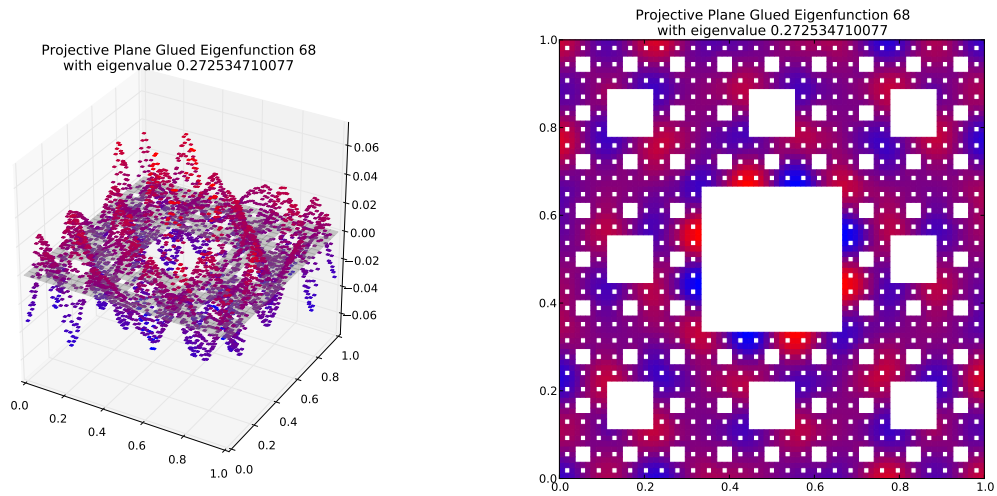
Compare to  $m = 3$  eigenspace with eigenvalue 1.54700068802



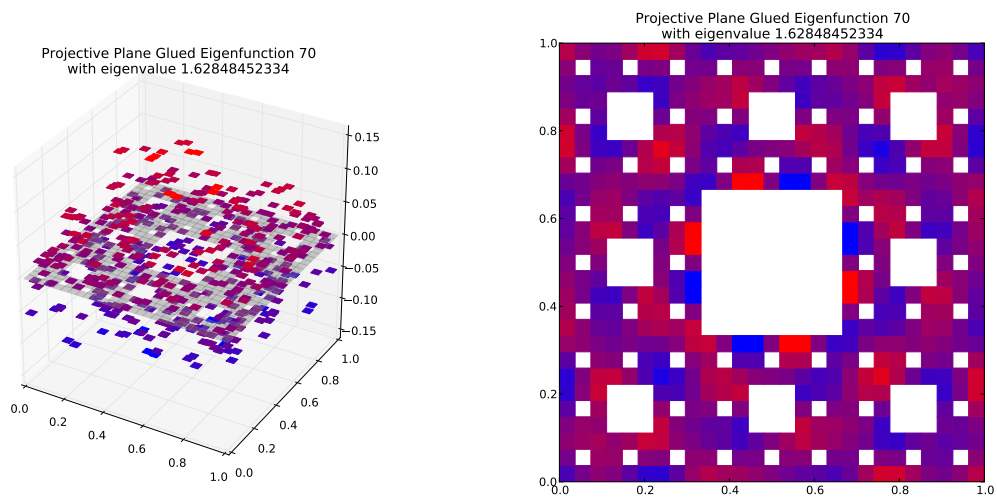
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.173689726315$   
Dot Value: 0.011157460889872017

## 69 $M = 4$ Eigenfunction 68

$M = 4$  Eigenfunction 68 has eigenvalue 0.272534710077



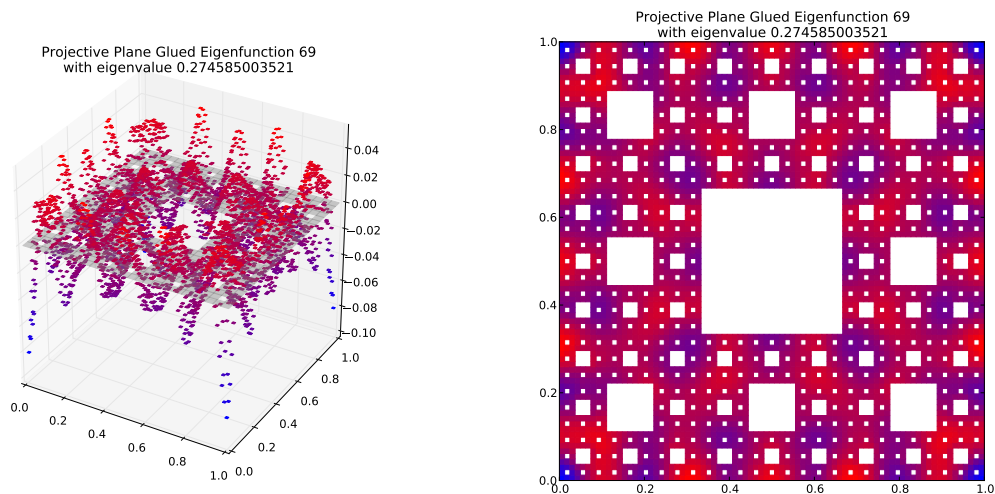
Compare to  $m = 3$  eigenspace with eigenvalue 1.62848452334



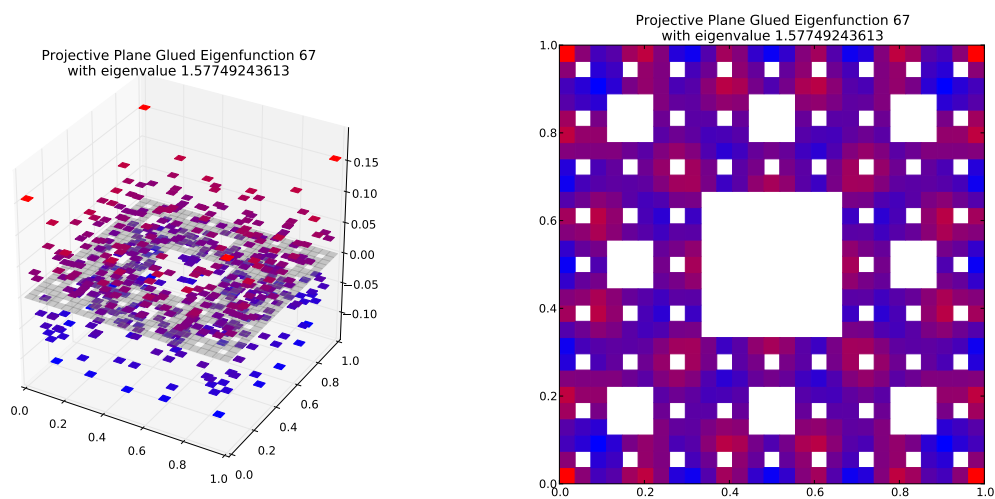
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.16735480514$   
Dot Value: 0.044900109554458334

## 70 $M = 4$ Eigenfunction 69

$M = 4$  Eigenfunction 69 has eigenvalue 0.274585003521



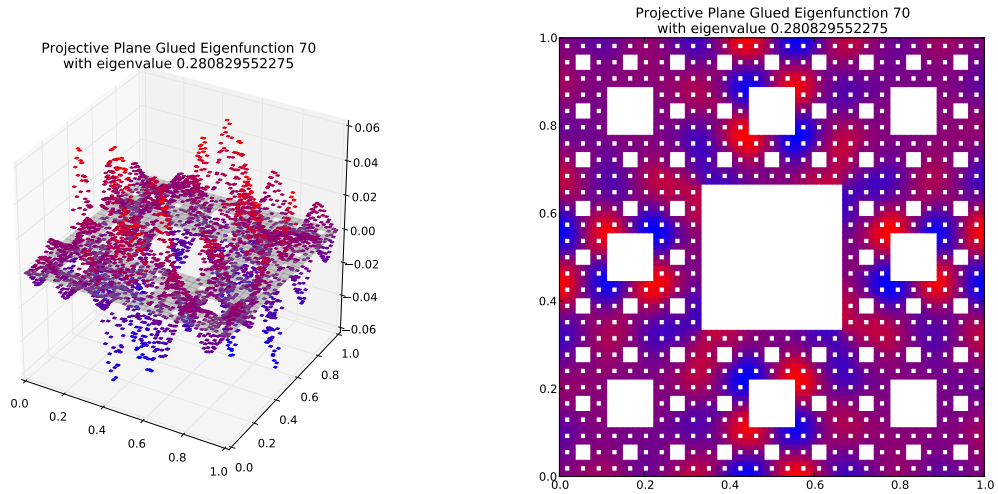
Compare to  $m = 3$  eigenspace with eigenvalue 1.57749243613



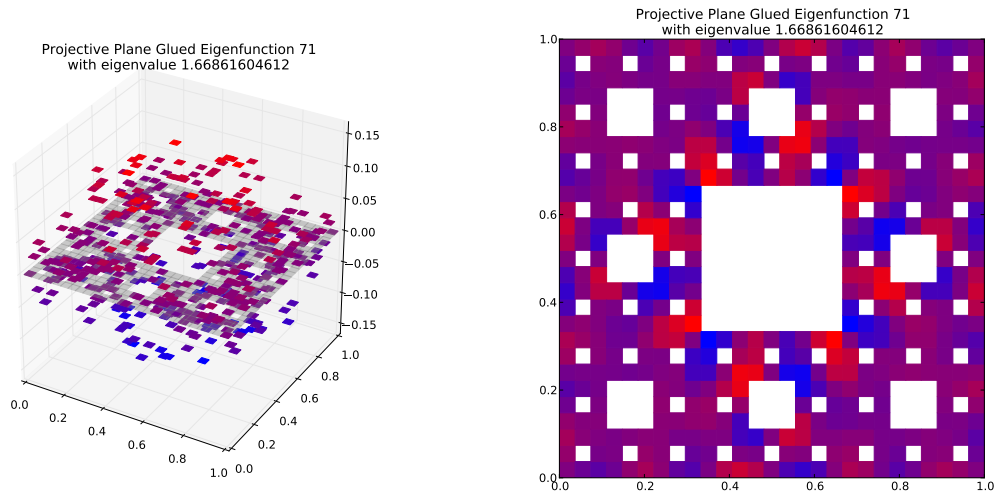
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174064228285$   
Dot Value: 0.01624720986502637

# 71 $M = 4$ Eigenfunction 70

$M = 4$  Eigenfunction 70 has eigenvalue 0.280829552275



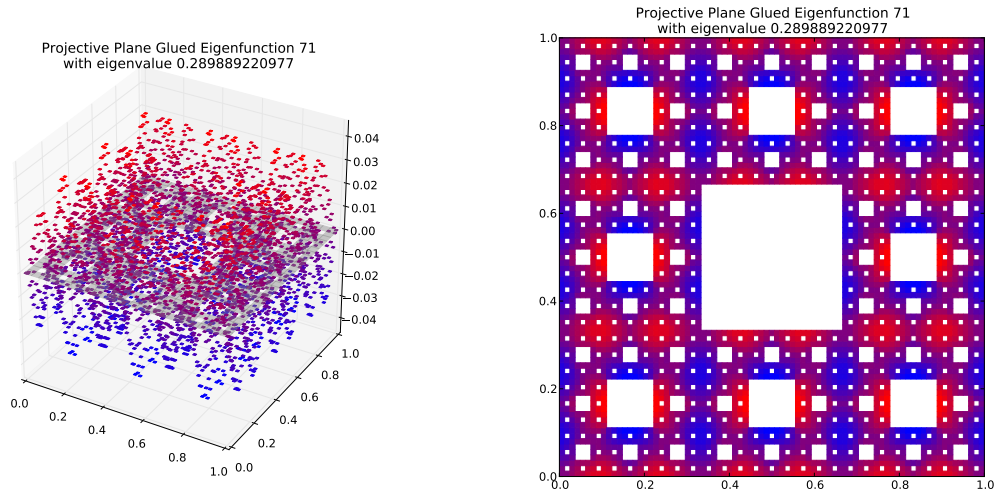
Compare to  $m = 3$  eigenspace with eigenvalue 1.66861604612



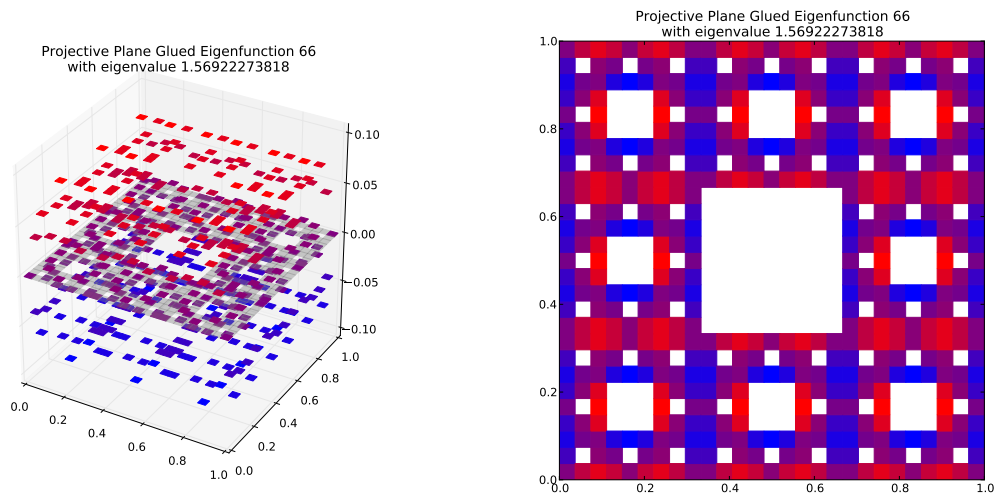
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168300881996$   
Dot Value: 0.1178965302680437

## 72 $M = 4$ Eigenfunction 71

$M = 4$  Eigenfunction 71 has eigenvalue 0.289889220977



Compare to  $m = 3$  eigenspace with eigenvalue 1.56922273818

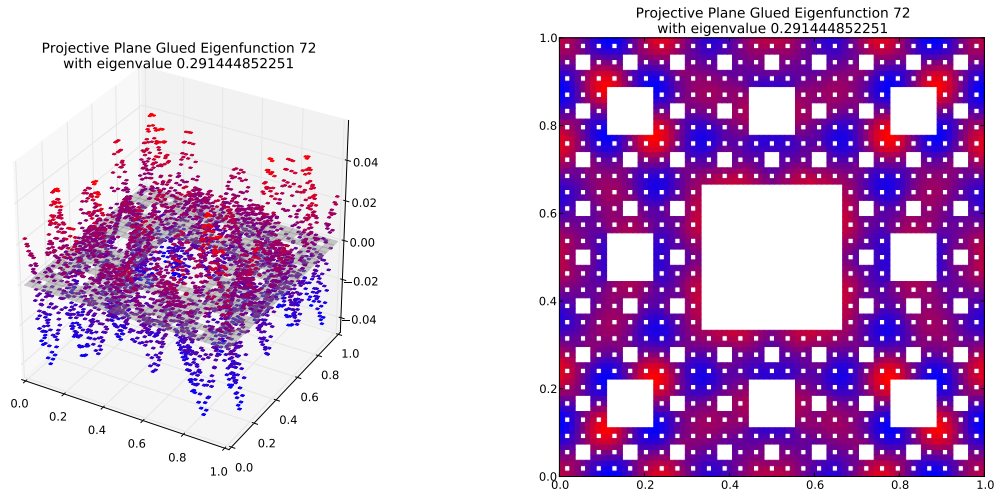


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.184734272531$

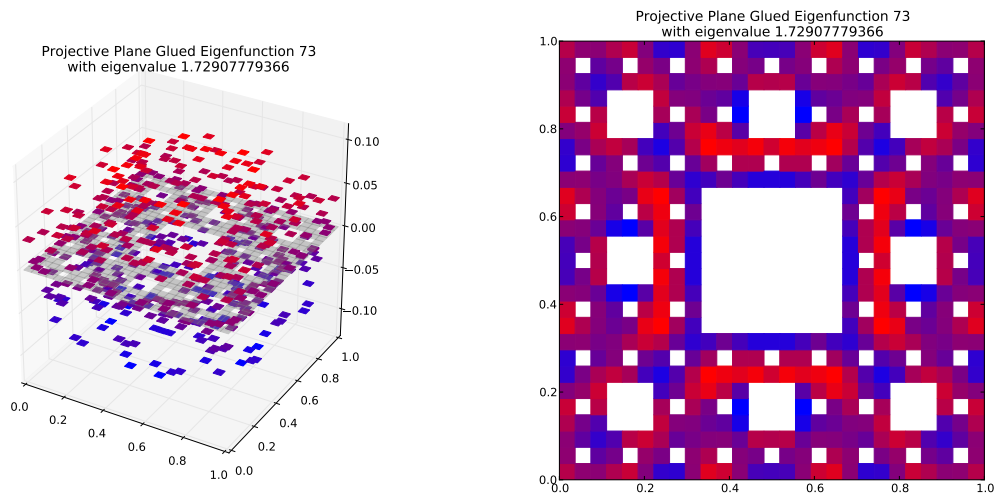
Dot Value: 0.0006826703997198091

## 73 $M = 4$ Eigenfunction 72

$M = 4$  Eigenfunction 72 has eigenvalue 0.291444852251



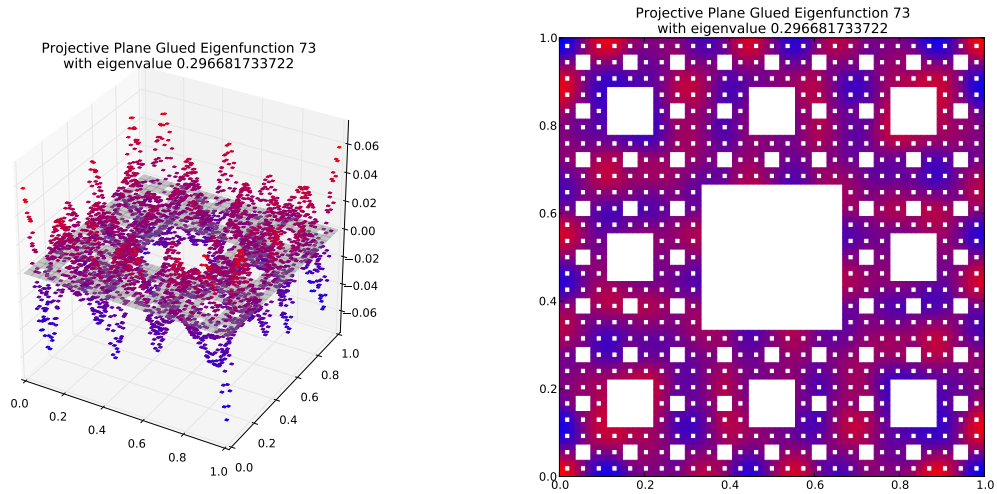
Compare to  $m = 3$  eigenspace with eigenvalue 1.72907779366



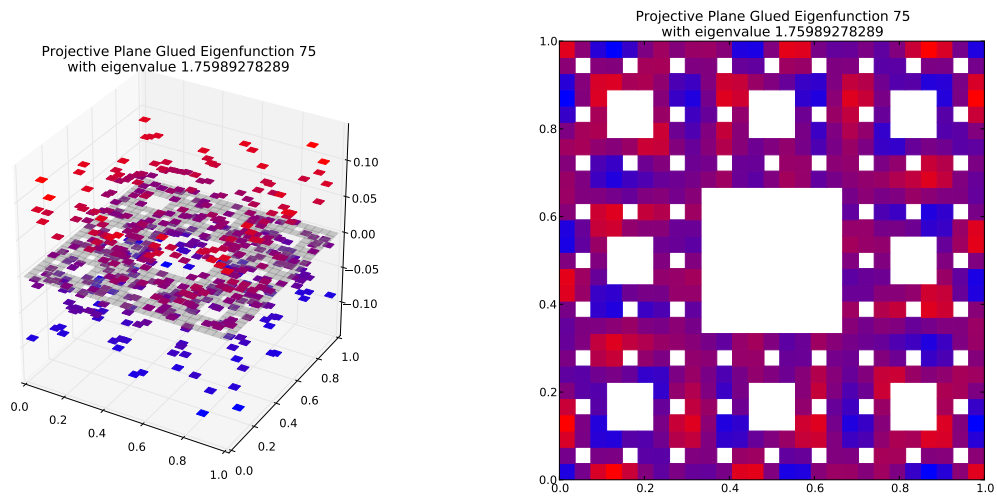
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.16855508371$   
Dot Value: 0.2332481479960513

## 74 $M = 4$ Eigenfunction 73

$M = 4$  Eigenfunction 73 has eigenvalue 0.296681733722



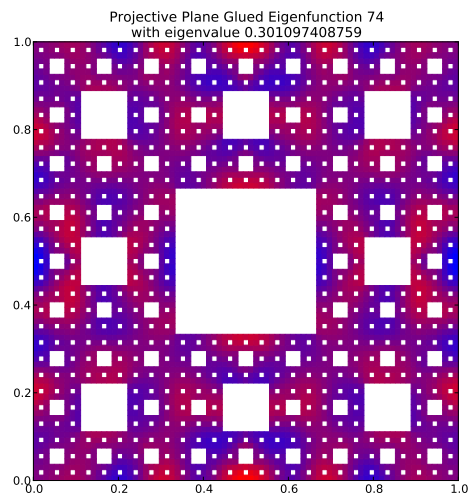
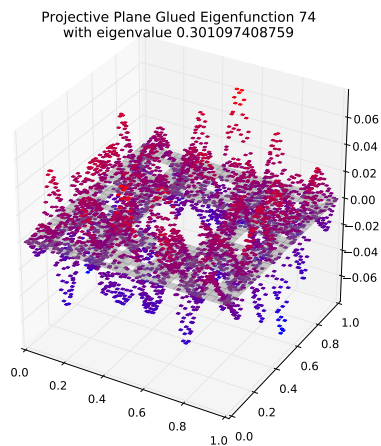
Compare to  $m = 3$  eigenspace with eigenvalue 1.75989278289



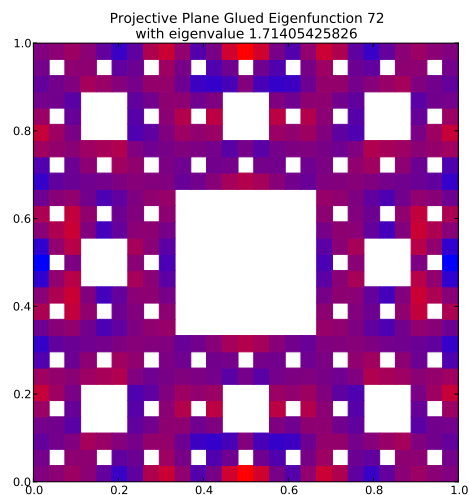
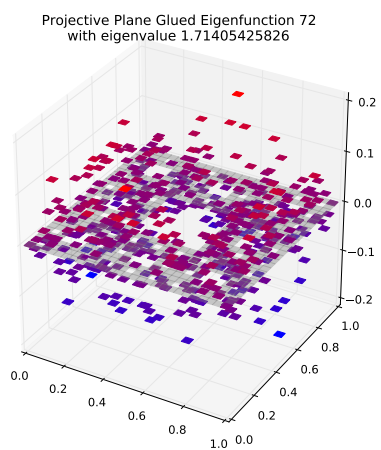
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168579436547$   
Dot Value: 0.06885356414974908

## 75 $M = 4$ Eigenfunction 74

$M = 4$  Eigenfunction 74 has eigenvalue 0.301097408759



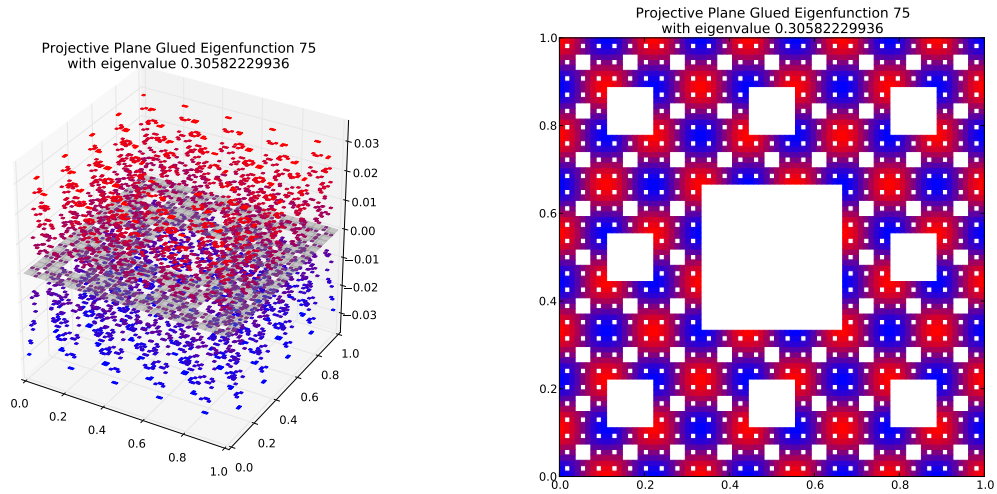
Compare to  $m = 3$  eigenspace with eigenvalue 1.71405425826



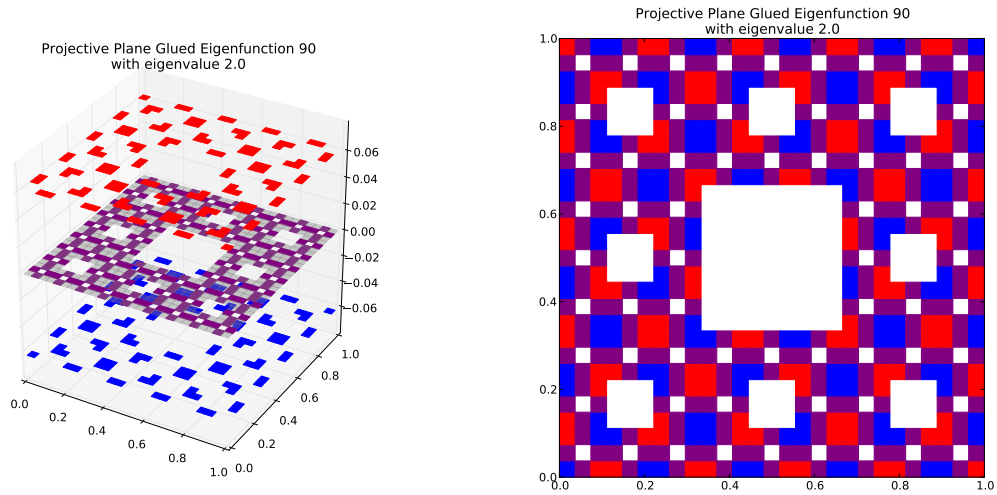
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.175663872545$   
Dot Value: 0.02407375086011887

## 76 $M = 4$ Eigenfunction 75

$M = 4$  Eigenfunction 75 has eigenvalue 0.30582229936



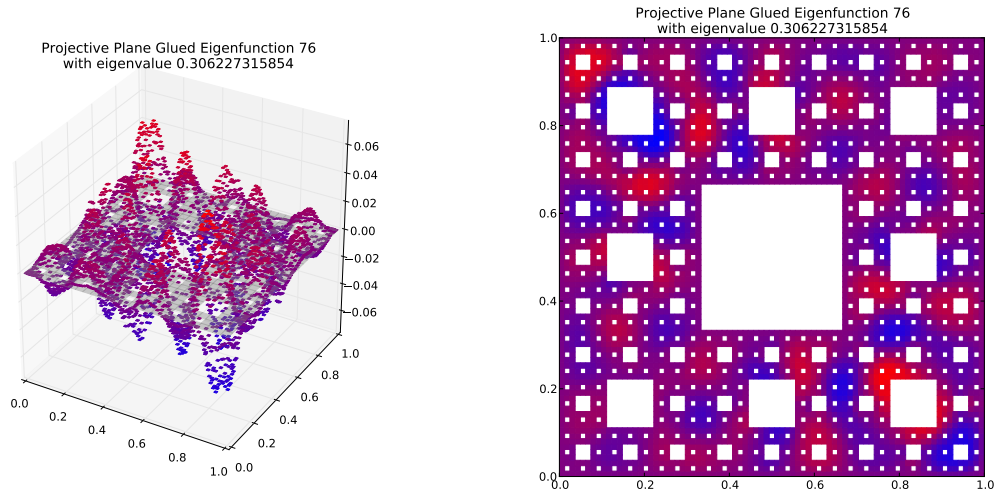
Compare to  $m = 3$  eigenspace with eigenvalue 2.0  
(Note: Eigenspace Dimension  $> 1$ )



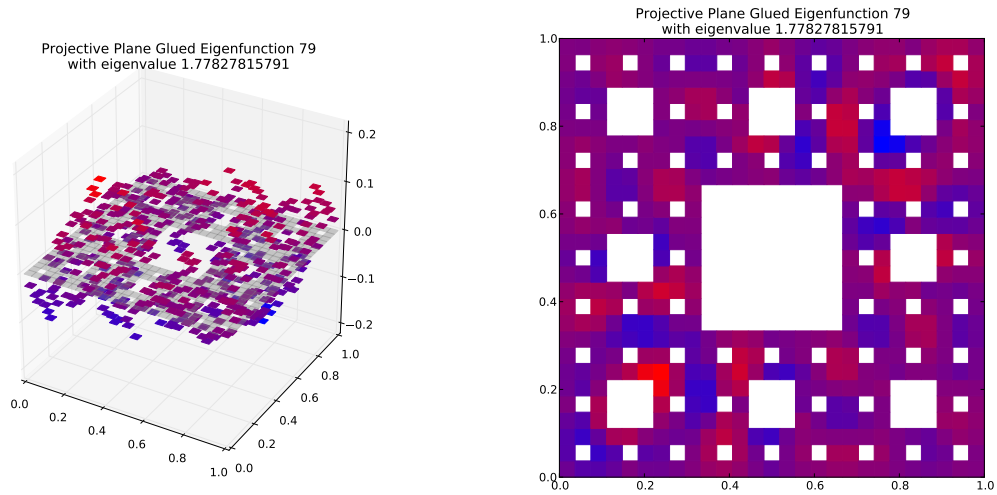
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.15291114968$   
Dot Value: 0.0

## 77 $M = 4$ Eigenfunction 76

$M = 4$  Eigenfunction 76 has eigenvalue 0.306227315854



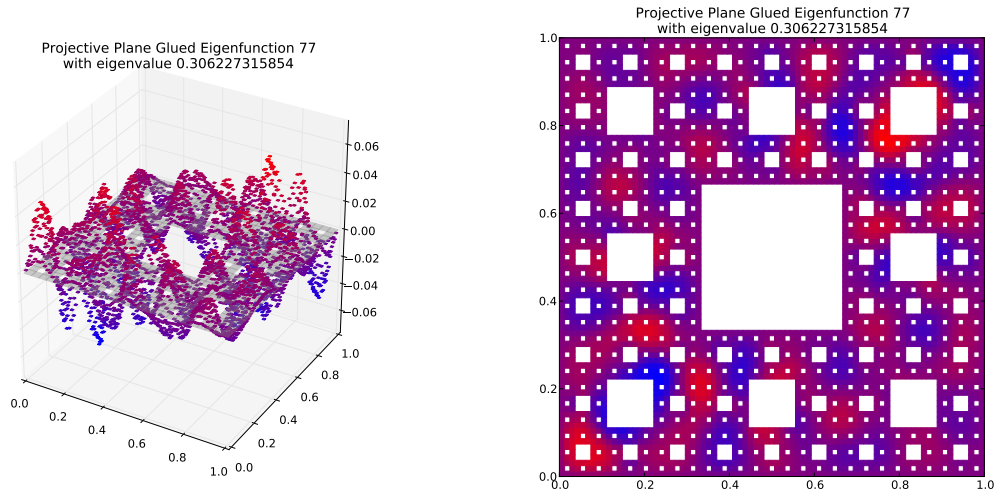
Compare to  $m = 3$  eigenspace with eigenvalue 1.77827815791  
(Note: Eigenspace Dimension  $> 1$ )



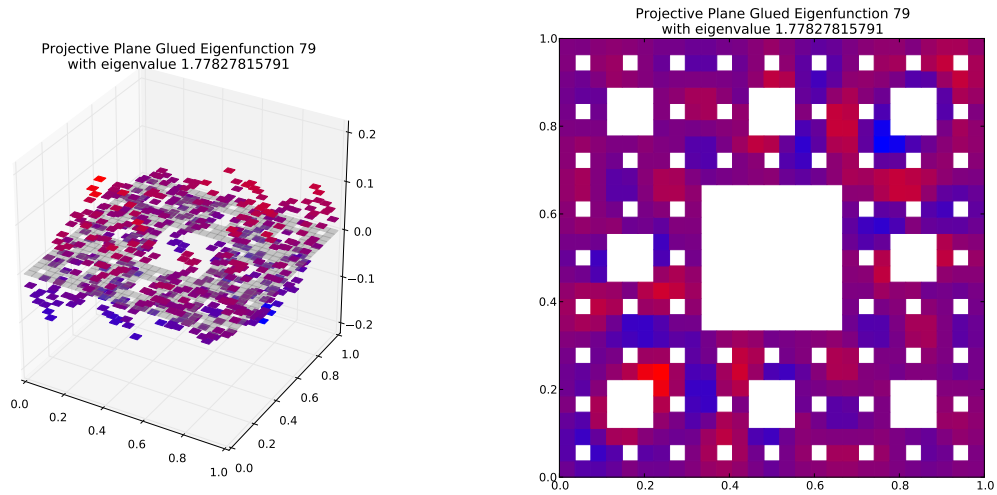
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.17220439586$   
Dot Value: 0.030795989232556664

## 78 $M = 4$ Eigenfunction 77

$M = 4$  Eigenfunction 77 has eigenvalue 0.306227315855



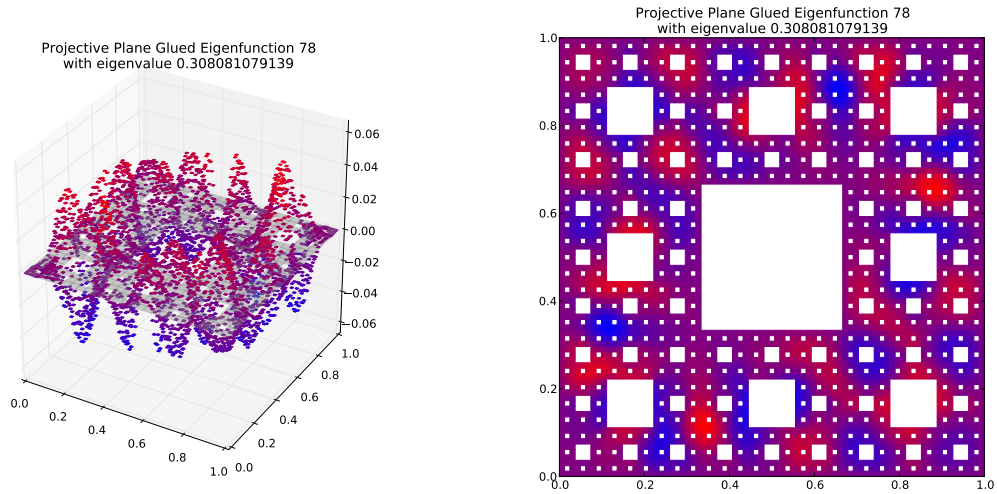
Compare to  $m = 3$  eigenspace with eigenvalue 1.77827815791  
(Note: Eigenspace Dimension  $> 1$ )



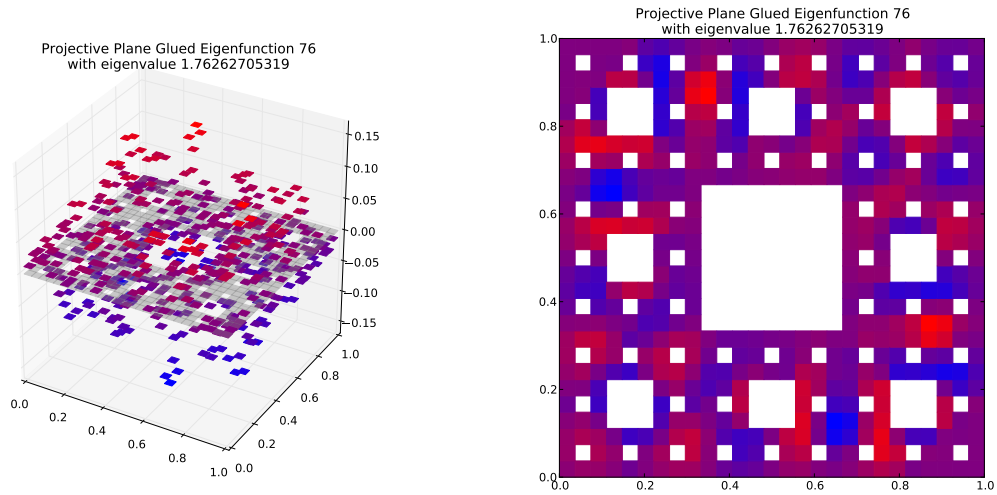
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.17220439586$   
Dot Value: 0.030795989232554777

## 79 $M = 4$ Eigenfunction 78

$M = 4$  Eigenfunction 78 has eigenvalue 0.308081079139



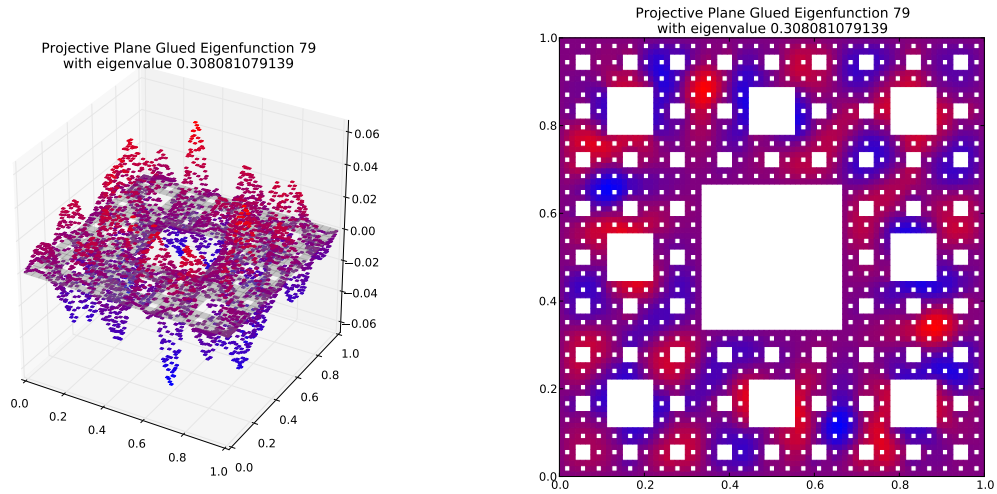
Compare to  $m = 3$  eigenspace with eigenvalue 1.76262705319  
(Note: Eigenspace Dimension  $> 1$ )



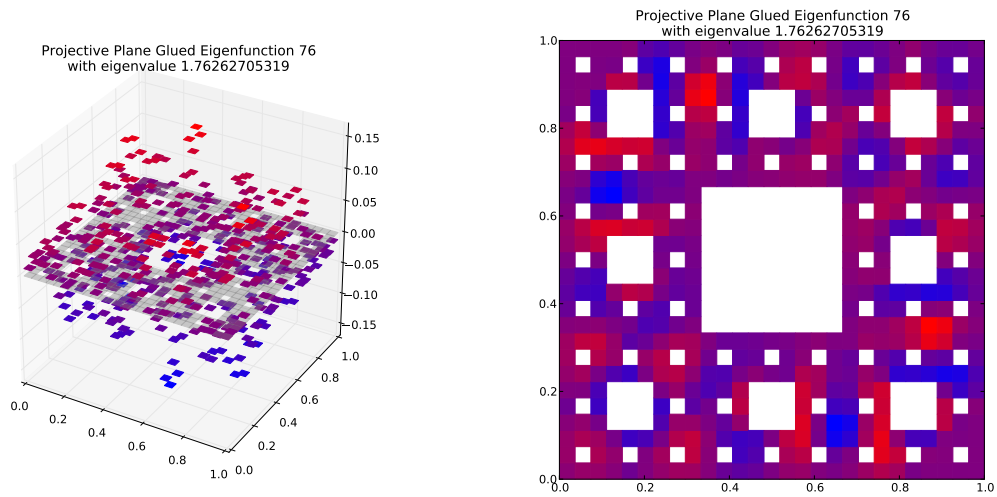
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174785175674$   
Dot Value: 0.032987769524609356

## 80 $M = 4$ Eigenfunction 79

$M = 4$  Eigenfunction 79 has eigenvalue 0.308081079139



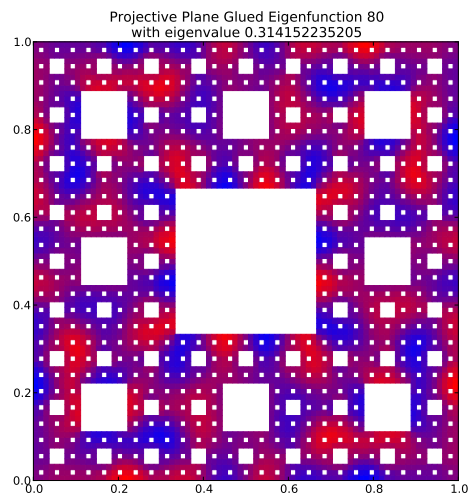
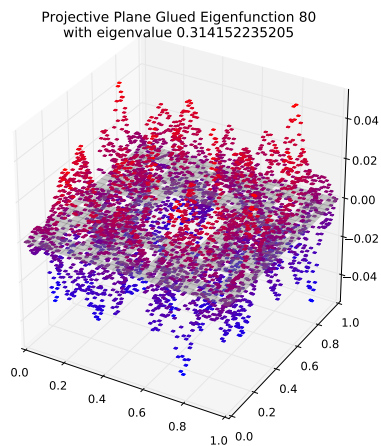
Compare to  $m = 3$  eigenspace with eigenvalue 1.76262705319  
(Note: Eigenspace Dimension  $> 1$ )



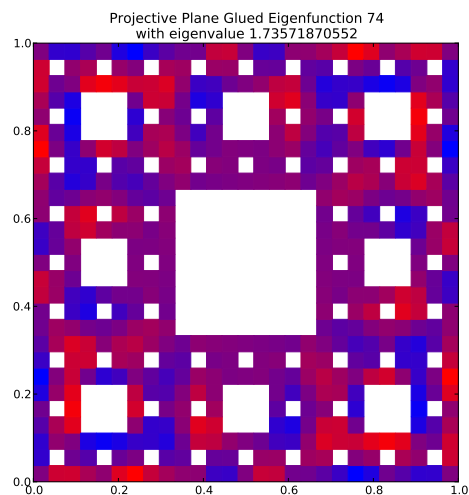
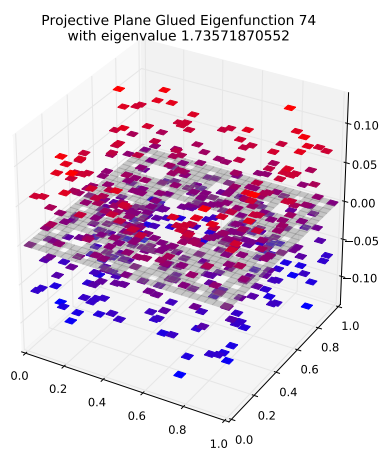
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174785175674$   
Dot Value: 0.032987769524618016

# 81 $M = 4$ Eigenfunction 80

$M = 4$  Eigenfunction 80 has eigenvalue 0.314152235205



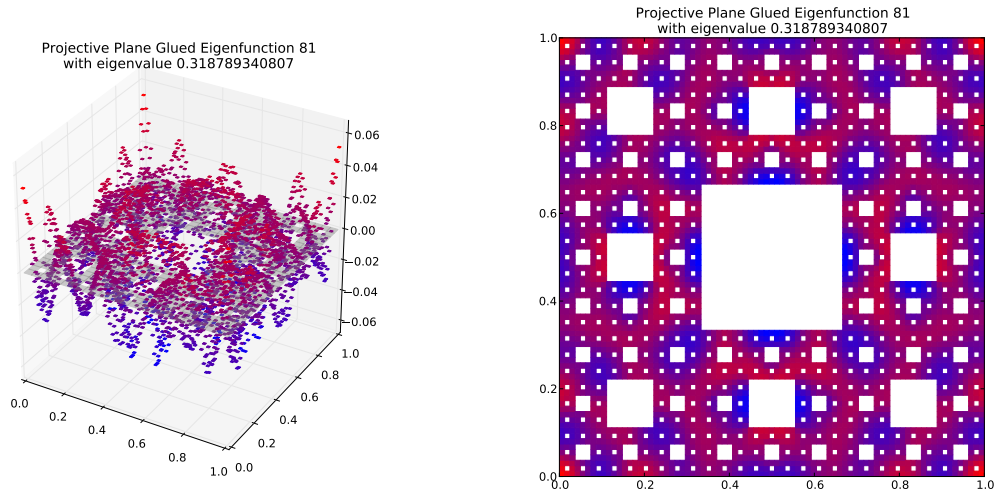
Compare to  $m = 3$  eigenspace with eigenvalue 1.73571870552



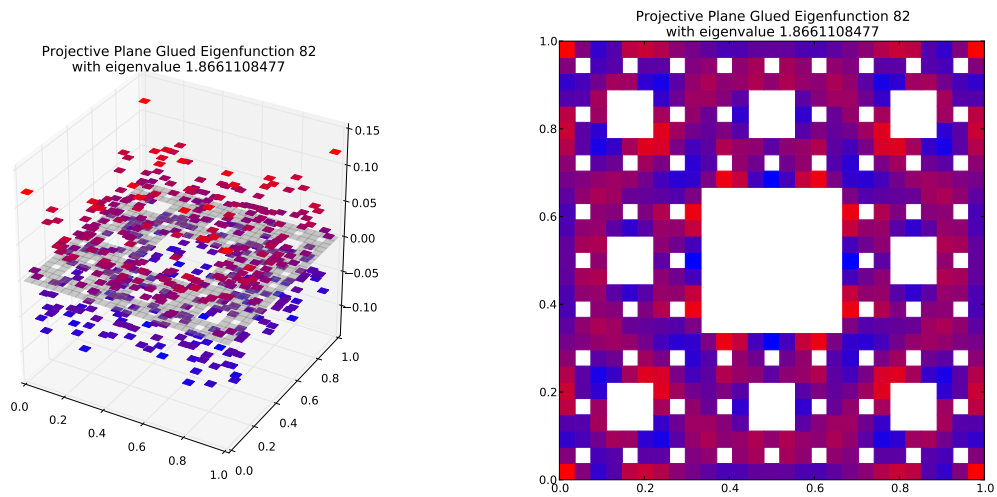
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180992596441$   
Dot Value: 0.20374379840550116

## 82 $M = 4$ Eigenfunction 81

$M = 4$  Eigenfunction 81 has eigenvalue 0.318789340807



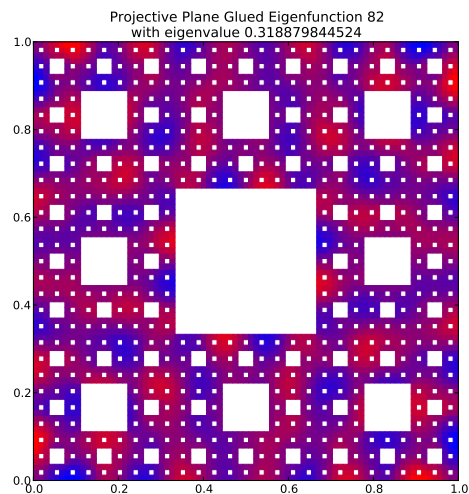
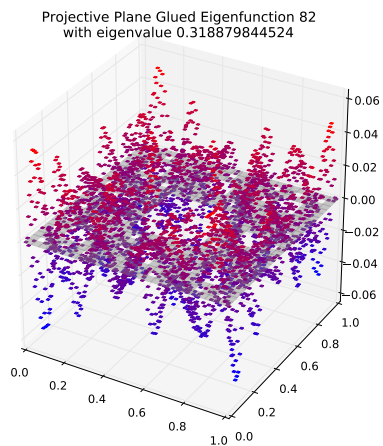
Compare to  $m = 3$  eigenspace with eigenvalue 1.8661108477



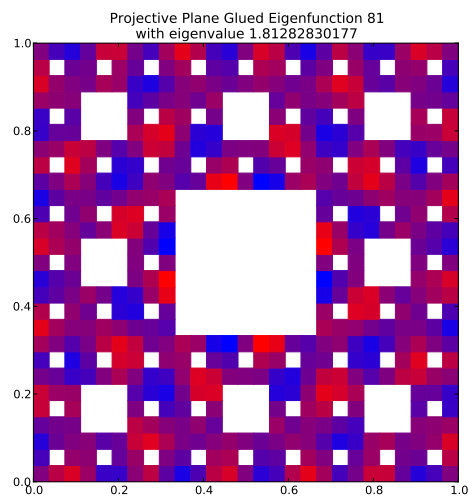
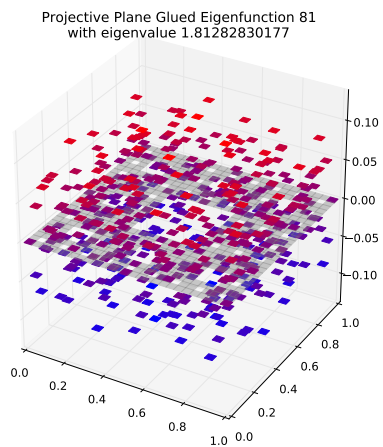
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.170830870631$   
Dot Value: 0.25284513461677016

### 83 $M = 4$ Eigenfunction 82

$M = 4$  Eigenfunction 82 has eigenvalue 0.318879844524



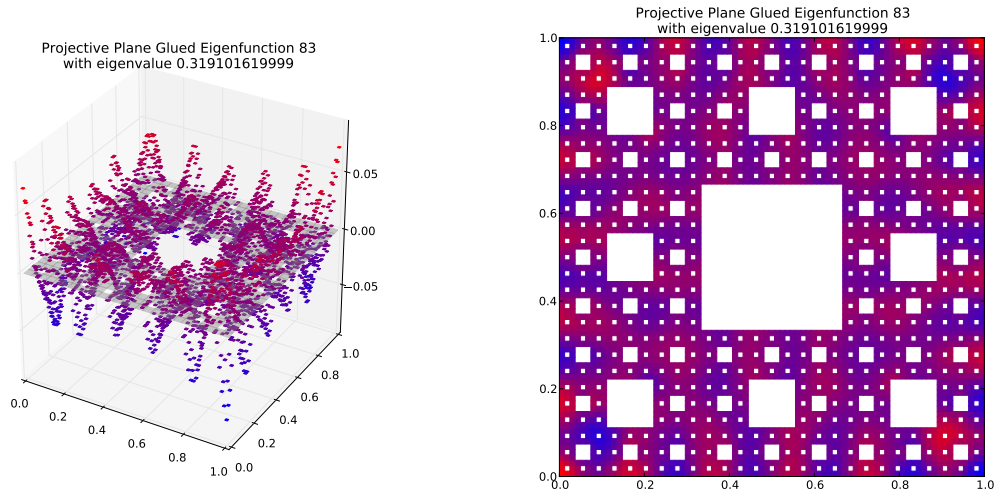
Compare to  $m = 3$  eigenspace with eigenvalue 1.81282830177



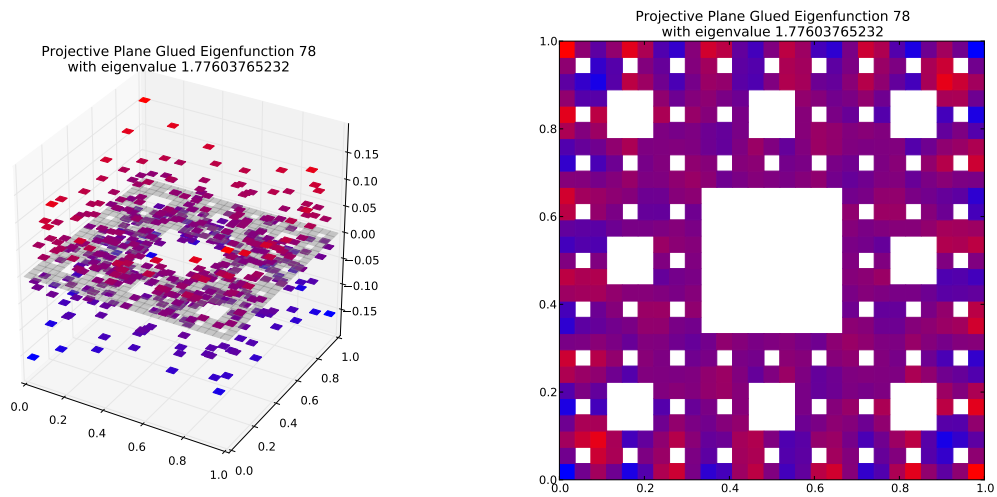
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.175901845869$   
Dot Value: 0.18280624472698825

## 84 $M = 4$ Eigenfunction 83

$M = 4$  Eigenfunction 83 has eigenvalue 0.319101619999



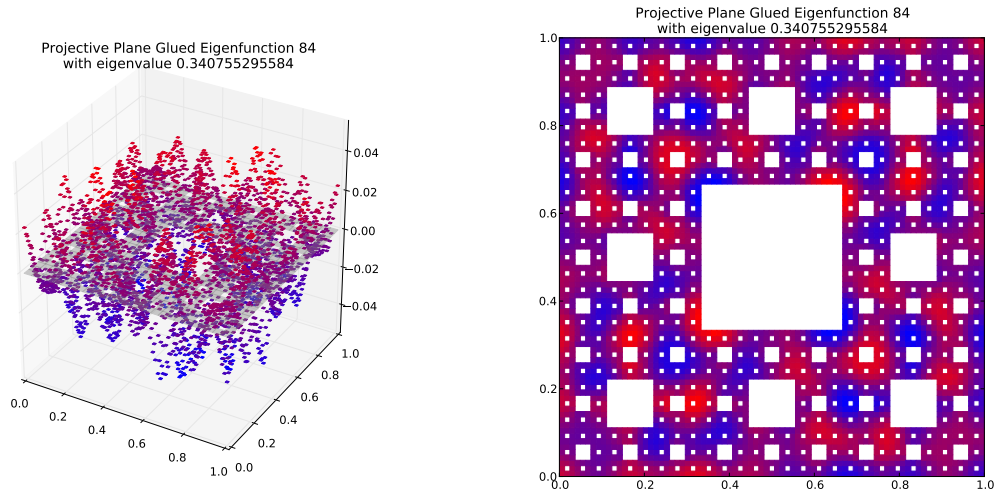
Compare to  $m = 3$  eigenspace with eigenvalue 1.77603765232



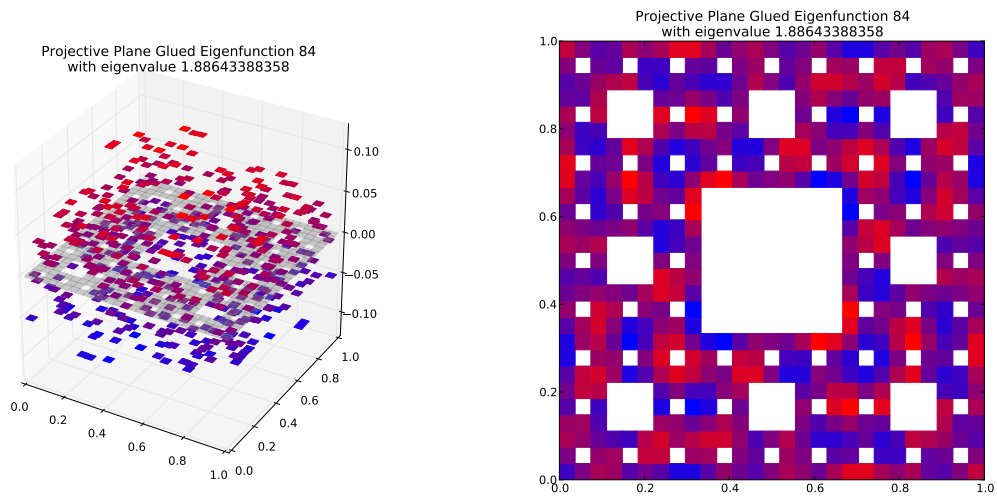
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.179670526457$   
Dot Value: 0.054131320825988594

## 85 $M = 4$ Eigenfunction 84

$M = 4$  Eigenfunction 84 has eigenvalue 0.340755295584



Compare to  $m = 3$  eigenspace with eigenvalue 1.88643388358

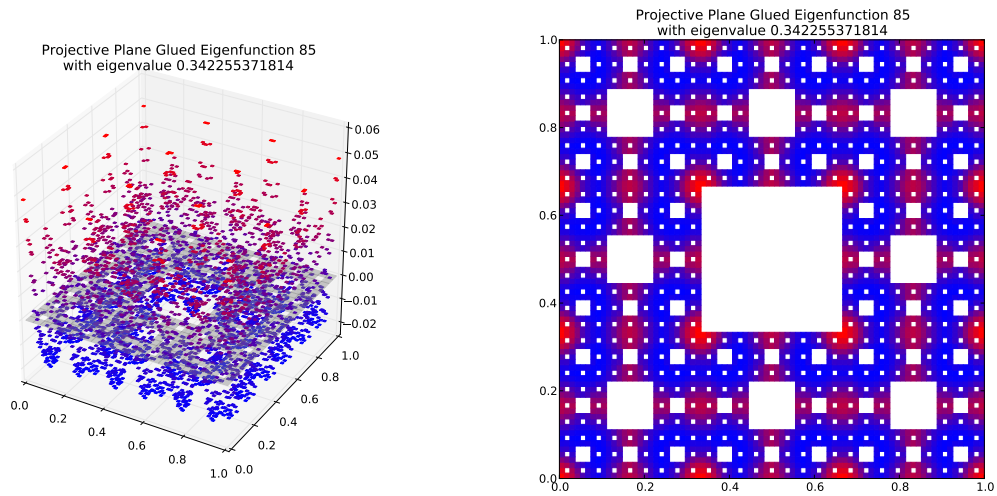


Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180634634773$

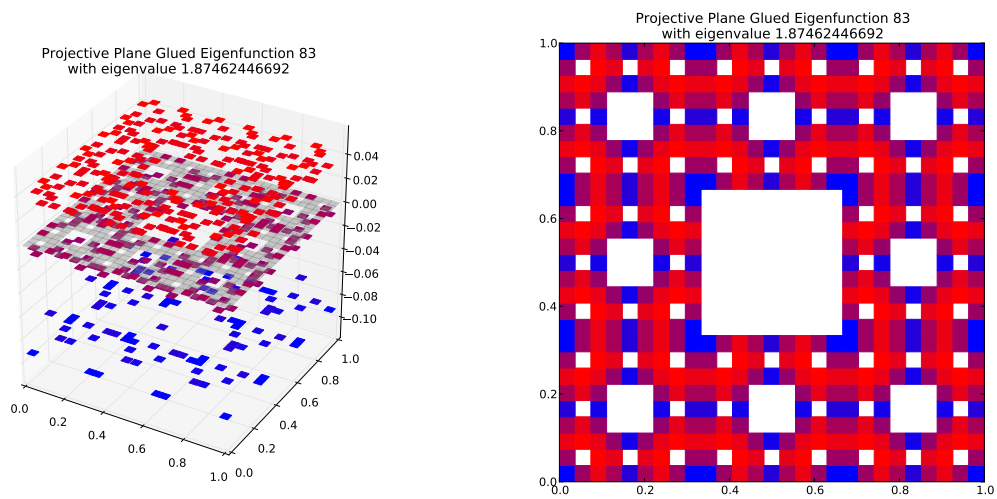
Dot Value: 0.06392479869118972

## 86 $M = 4$ Eigenfunction 85

$M = 4$  Eigenfunction 85 has eigenvalue 0.342255371814



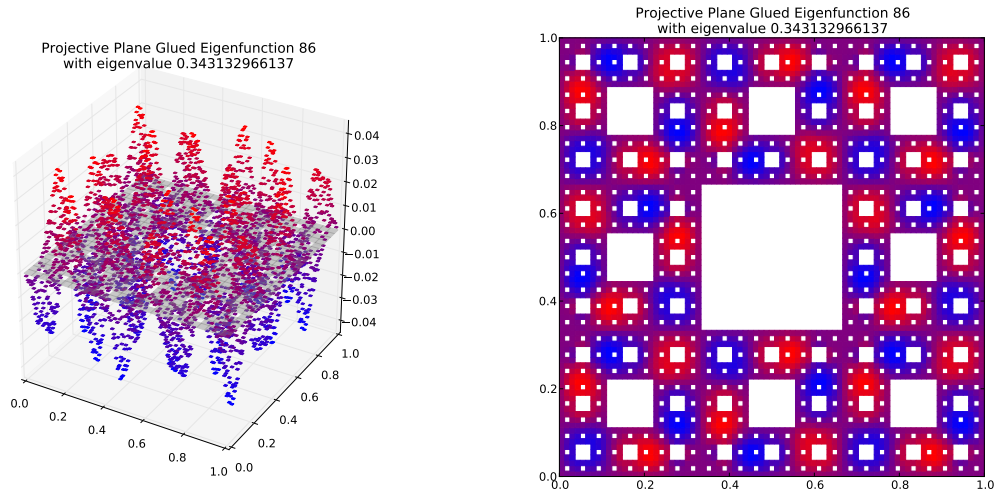
Compare to  $m = 3$  eigenspace with eigenvalue 1.87462446692



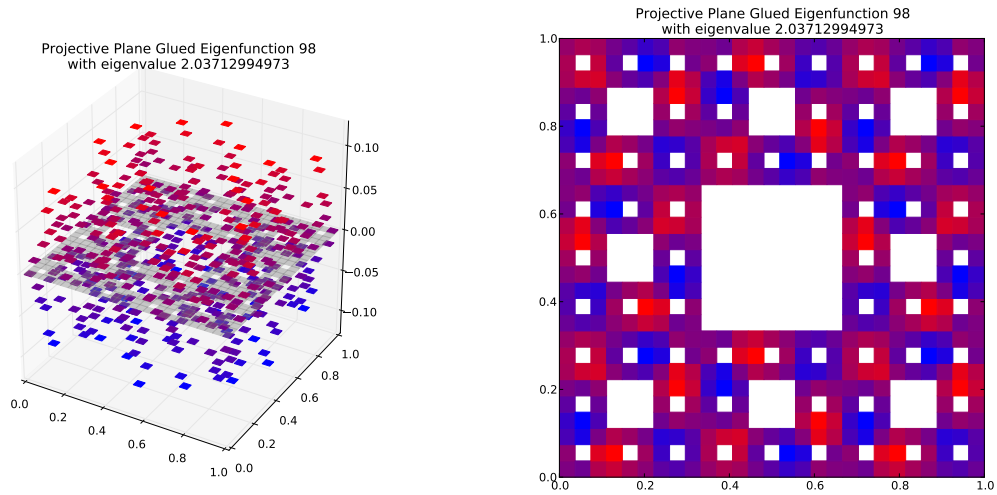
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.182572764761$   
Dot Value: 0.029416001032021244

## 87 $M = 4$ Eigenfunction 86

$M = 4$  Eigenfunction 86 has eigenvalue 0.343132966137



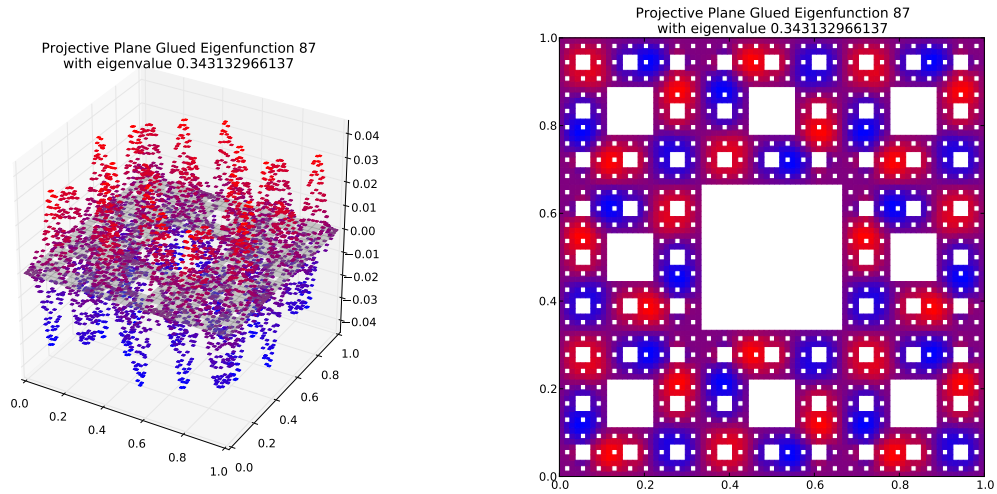
Compare to  $m = 3$  eigenspace with eigenvalue 2.03712994973  
(Note: Eigenspace Dimension  $> 1$ )



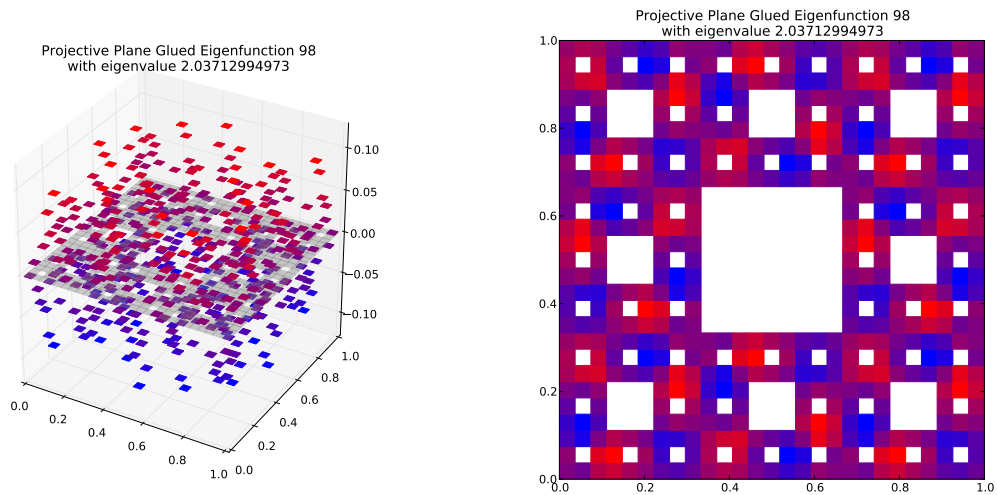
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168439409662$   
Dot Value: 0.01093503083721159

## 88 $M = 4$ Eigenfunction 87

$M = 4$  Eigenfunction 87 has eigenvalue 0.343132966137



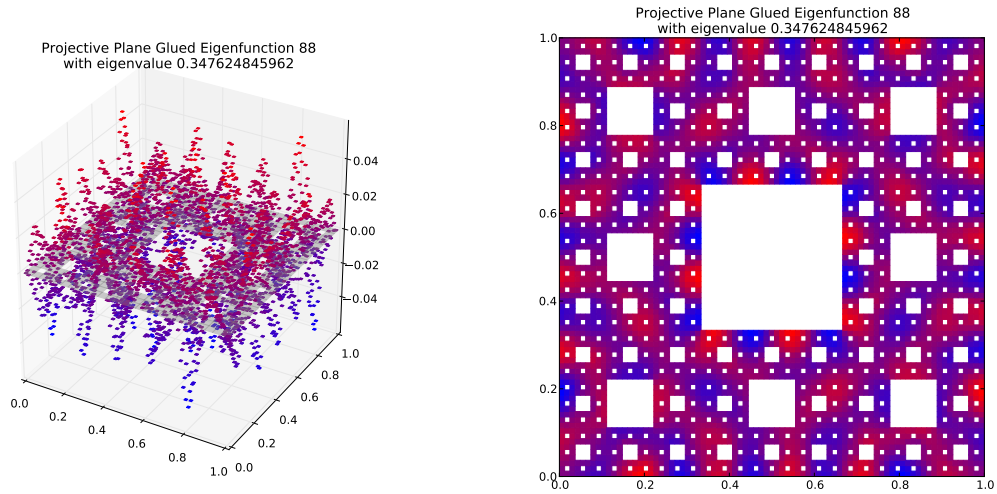
Compare to  $m = 3$  eigenspace with eigenvalue 2.03712994973  
(Note: Eigenspace Dimension  $> 1$ )



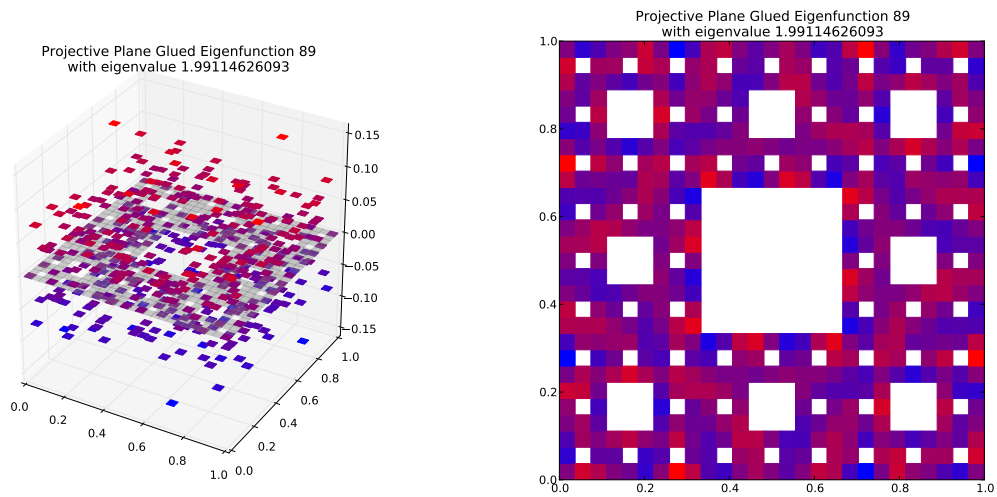
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.168439409662$   
Dot Value: 0.010935030837211923

## 89 $M = 4$ Eigenfunction 88

$M = 4$  Eigenfunction 88 has eigenvalue 0.347624845962



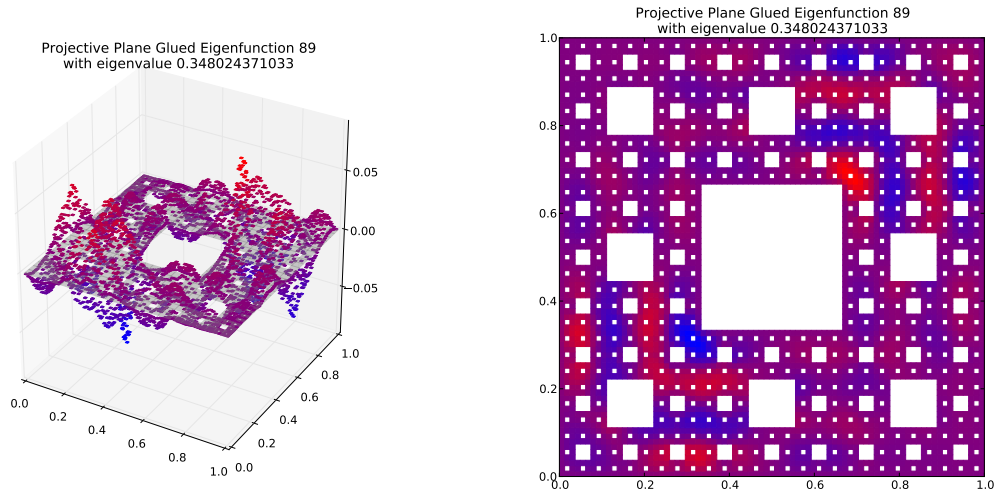
Compare to  $m = 3$  eigenspace with eigenvalue 1.99114626093



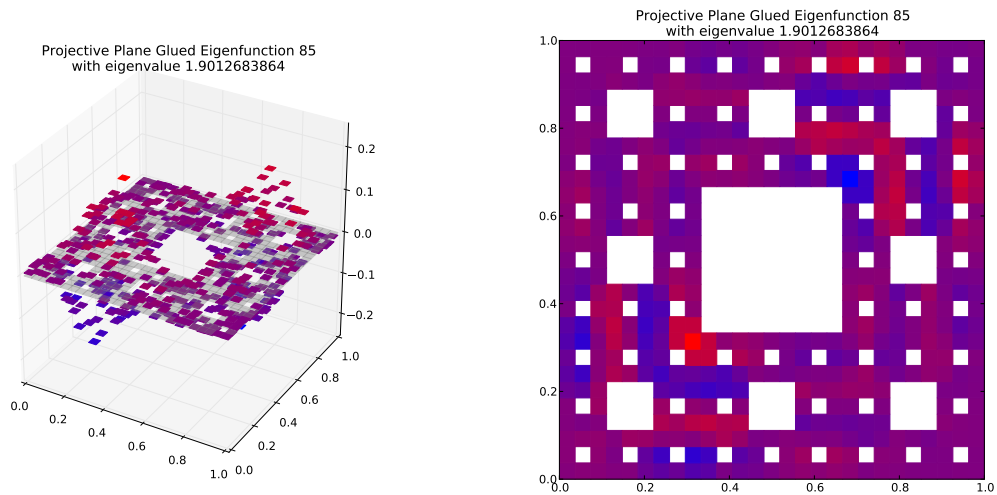
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.174585289279$   
Dot Value: 0.1746654075813474

## 90 $M = 4$ Eigenfunction 89

$M = 4$  Eigenfunction 89 has eigenvalue 0.348024371033



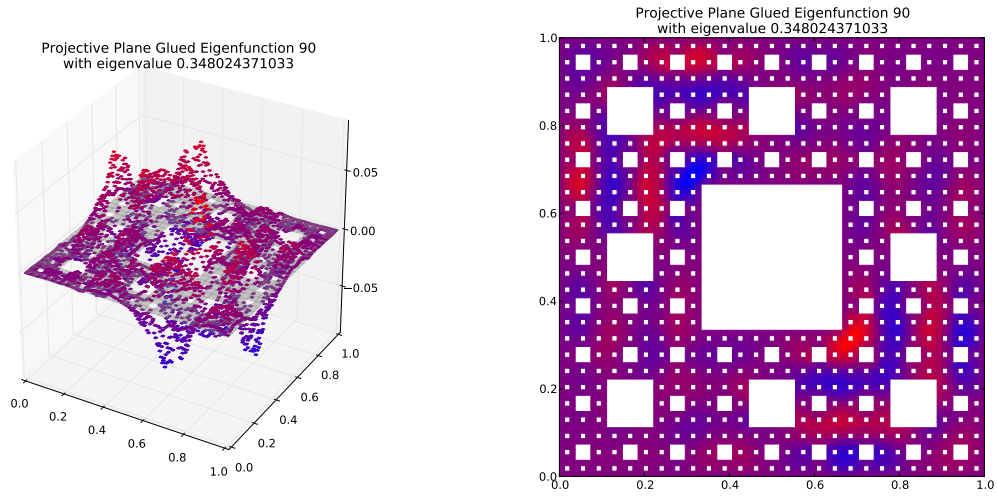
Compare to  $m = 3$  eigenspace with eigenvalue 1.9012683864  
(Note: Eigenspace Dimension  $> 1$ )



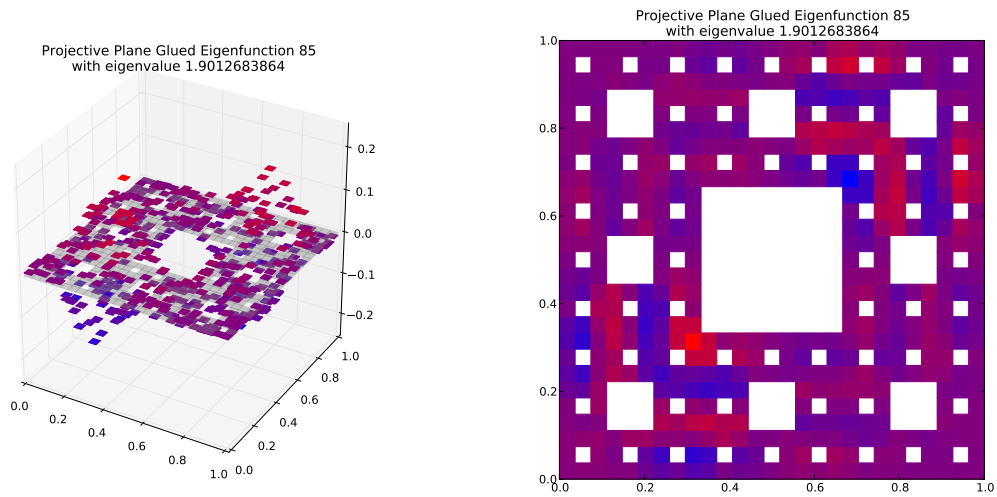
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.183048523565$   
Dot Value: 0.02024172637920818

# 91 $M = 4$ Eigenfunction 90

$M = 4$  Eigenfunction 90 has eigenvalue 0.348024371033



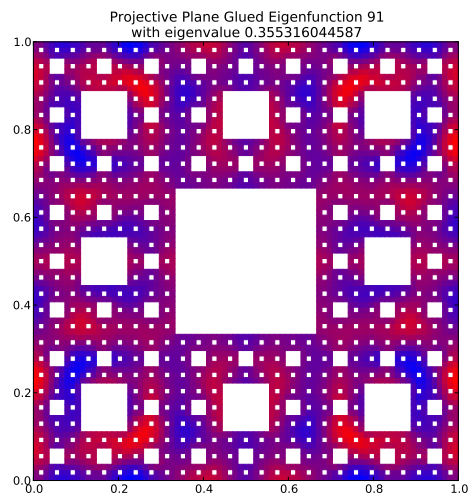
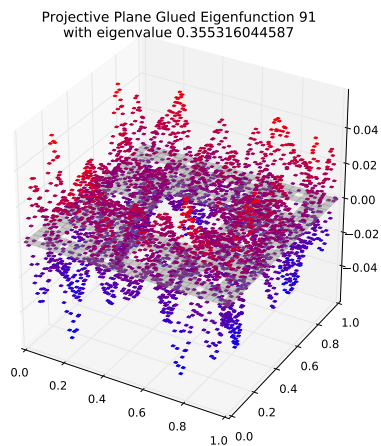
Compare to  $m = 3$  eigenspace with eigenvalue 1.9012683864  
(Note: Eigenspace Dimension  $> 1$ )



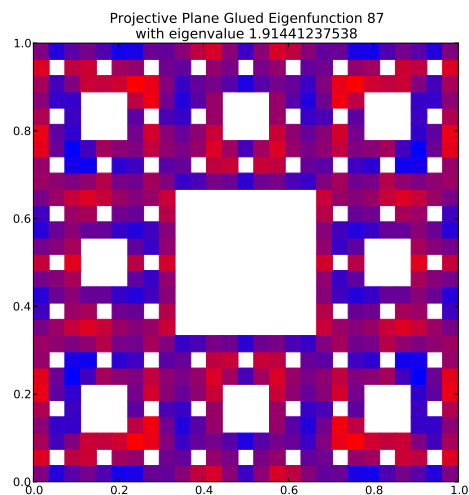
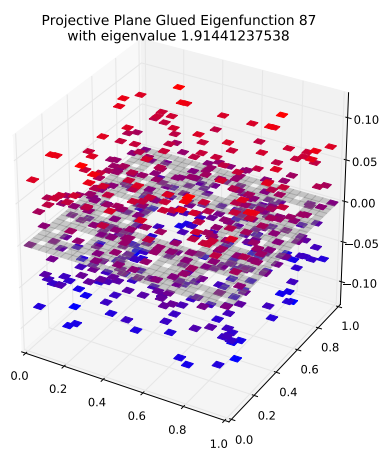
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.183048523565$   
Dot Value: 0.02024172637920585

## 92 $M = 4$ Eigenfunction 91

$M = 4$  Eigenfunction 91 has eigenvalue 0.355316044587



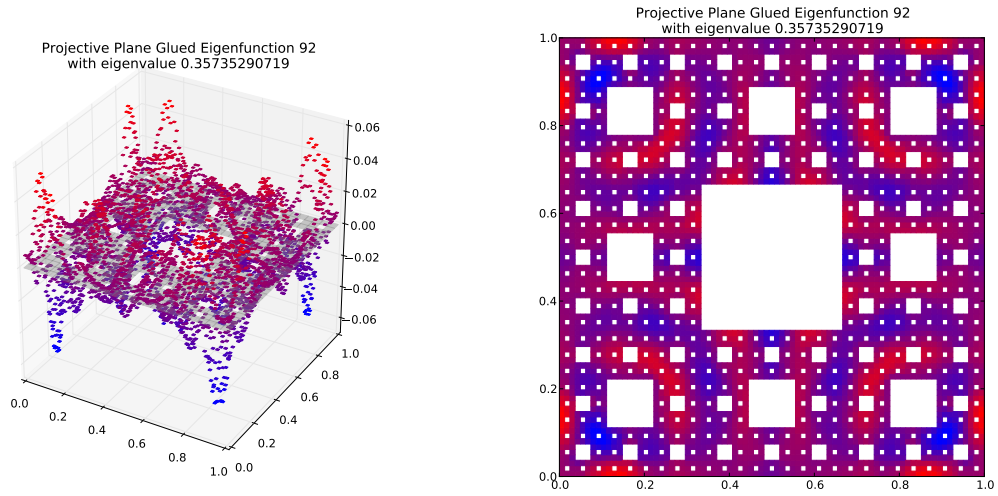
Compare to  $m = 3$  eigenspace with eigenvalue 1.91441237538



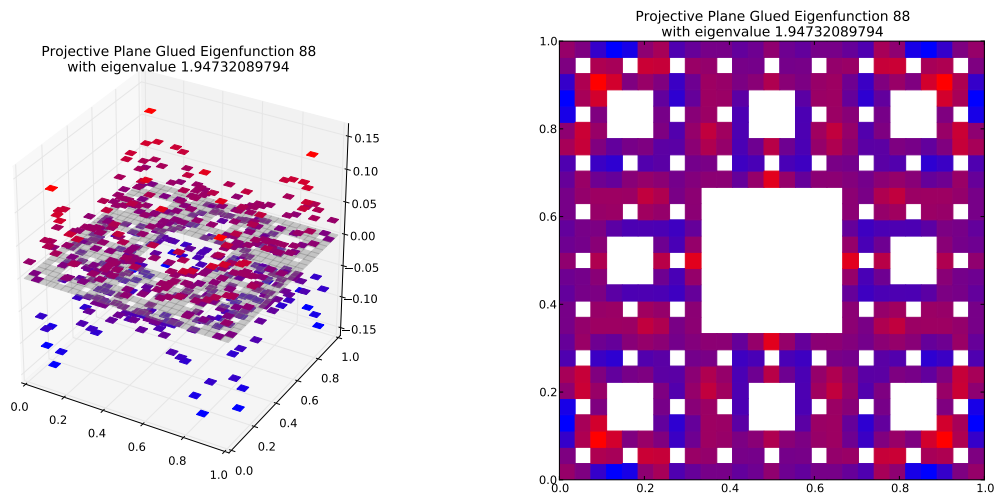
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185600578619$   
Dot Value: 0.05927409680171658

### 93 $M = 4$ Eigenfunction 92

$M = 4$  Eigenfunction 92 has eigenvalue 0.35735290719



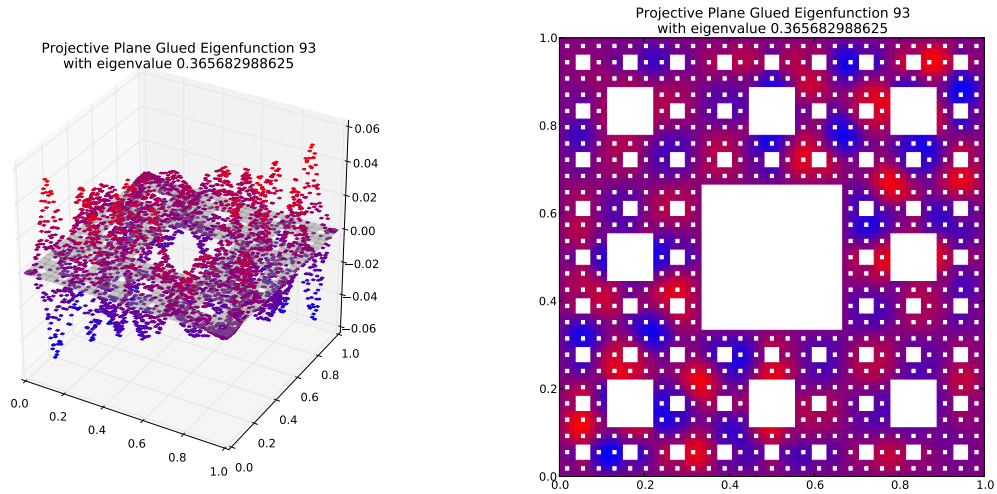
Compare to  $m = 3$  eigenspace with eigenvalue 1.94732089794



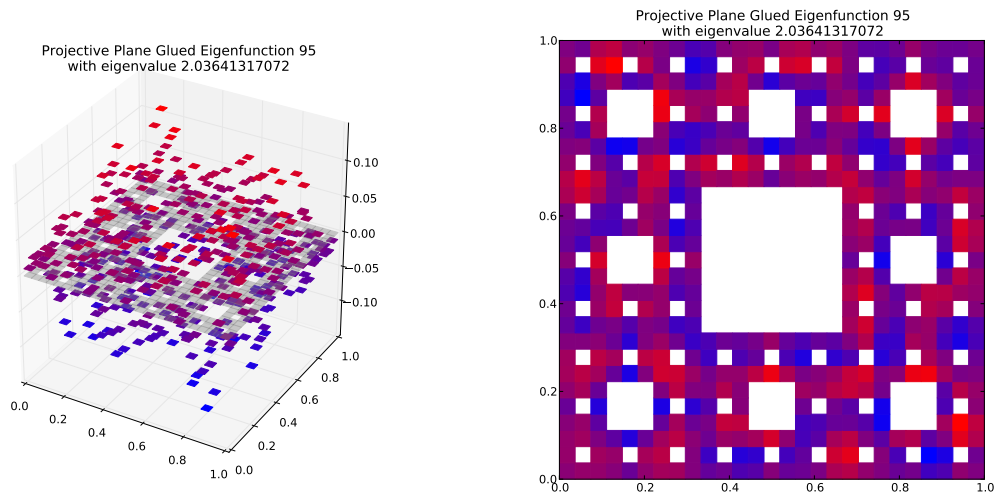
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18351002527$   
Dot Value: 0.1315043783601929

## 94 $M = 4$ Eigenfunction 93

$M = 4$  Eigenfunction 93 has eigenvalue 0.365682988625



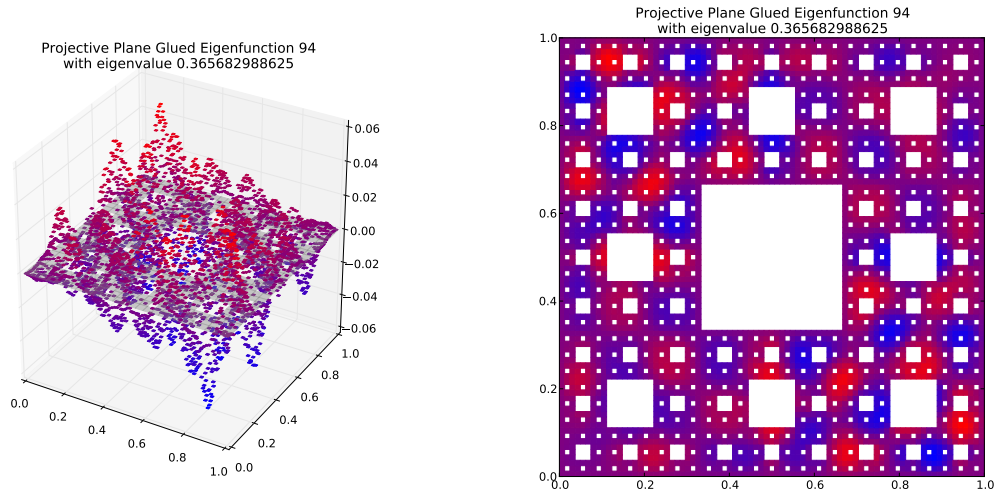
Compare to  $m = 3$  eigenspace with eigenvalue 2.03641317072  
(Note: Eigenspace Dimension  $> 1$ )



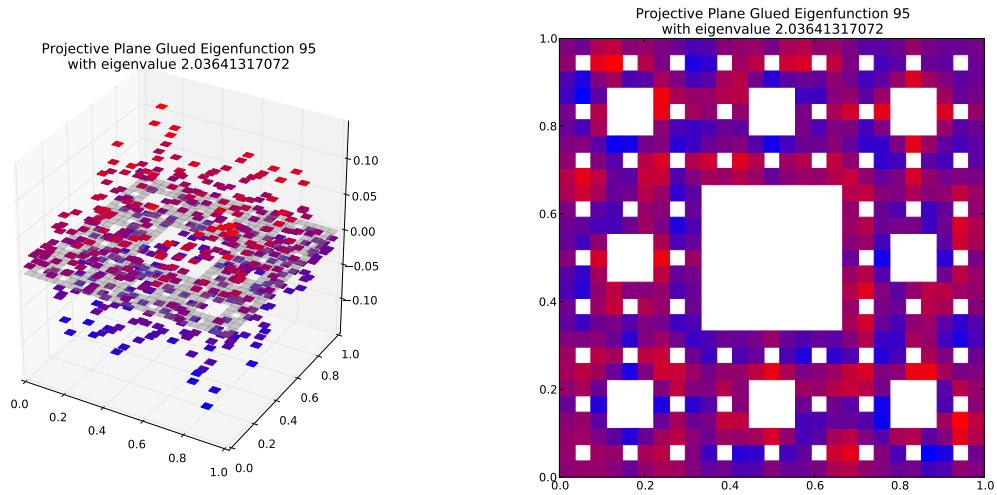
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.179572099554$   
Dot Value: 0.20517143823774542

## 95 $M = 4$ Eigenfunction 94

$M = 4$  Eigenfunction 94 has eigenvalue 0.365682988625



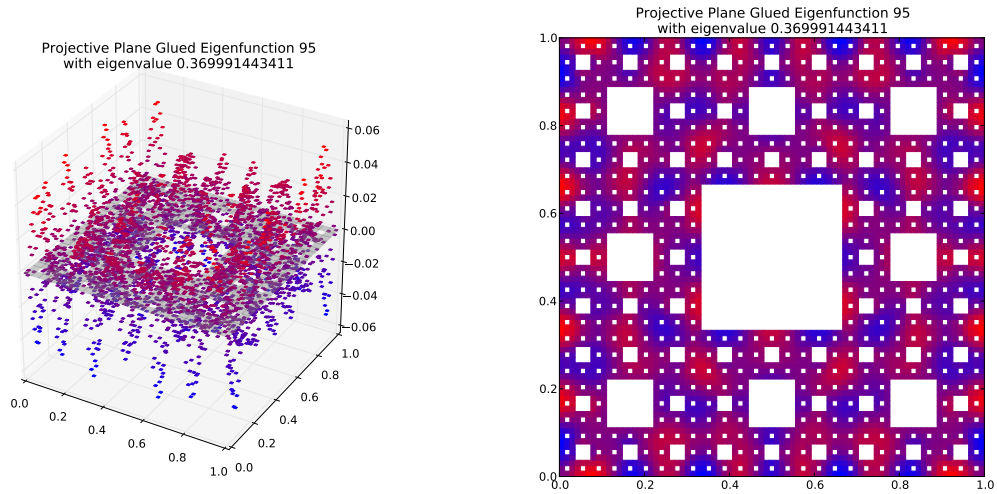
Compare to  $m = 3$  eigenspace with eigenvalue 2.03641317072  
(Note: Eigenspace Dimension  $> 1$ )



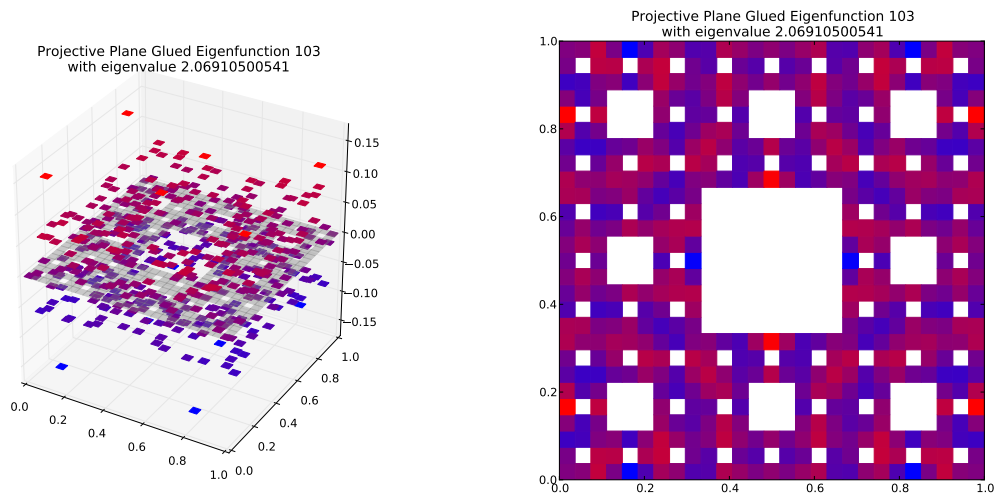
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.179572099554$   
Dot Value: 0.2051714382377713

## 96 $M = 4$ Eigenfunction 95

$M = 4$  Eigenfunction 95 has eigenvalue 0.369991443411



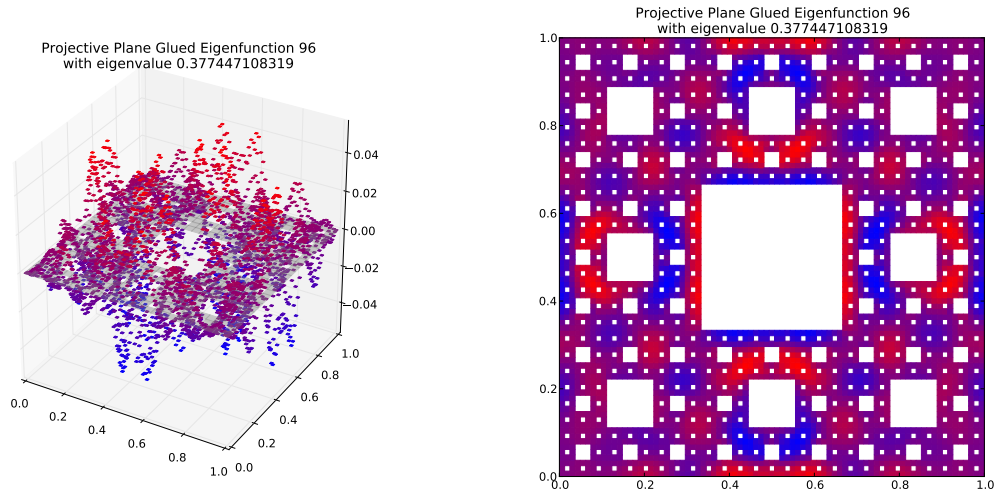
Compare to  $m = 3$  eigenspace with eigenvalue 2.06910500541



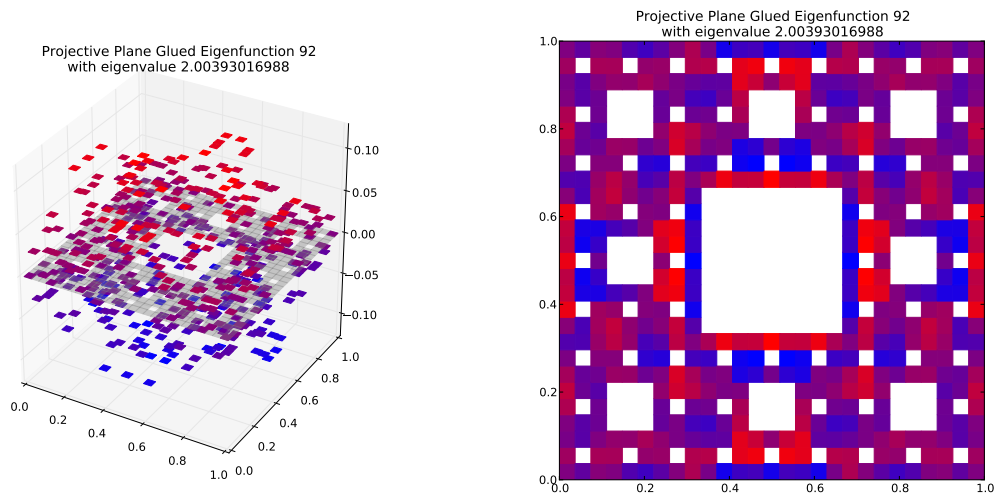
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.178817141925$   
Dot Value: 0.31570929437082595

## 97 $M = 4$ Eigenfunction 96

$M = 4$  Eigenfunction 96 has eigenvalue 0.377447108319



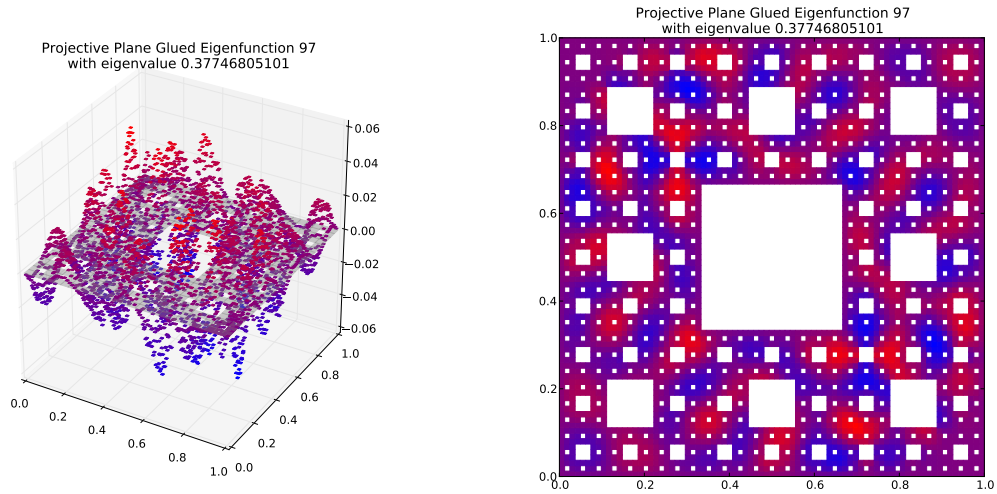
Compare to  $m = 3$  eigenspace with eigenvalue 2.00393016988



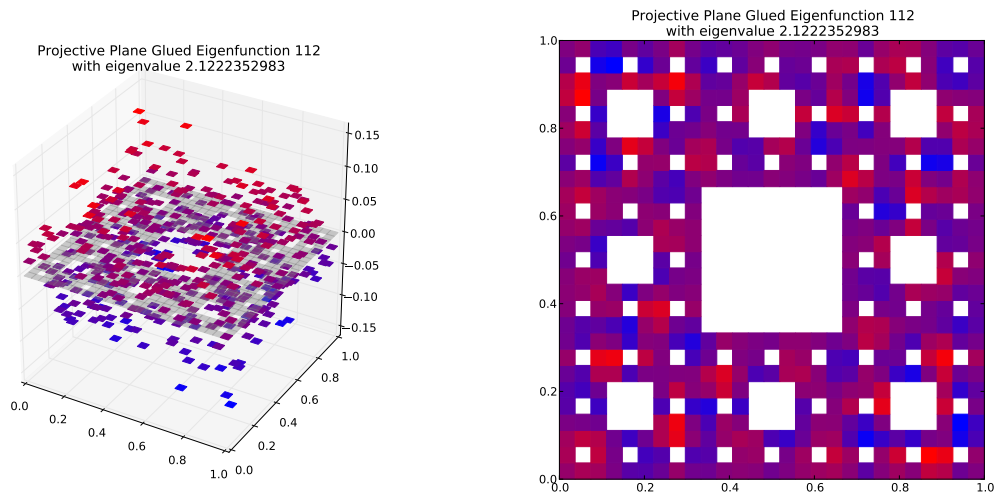
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.188353423683$   
Dot Value: 0.09299559772131505

## 98 $M = 4$ Eigenfunction 97

$M = 4$  Eigenfunction 97 has eigenvalue 0.37746805101



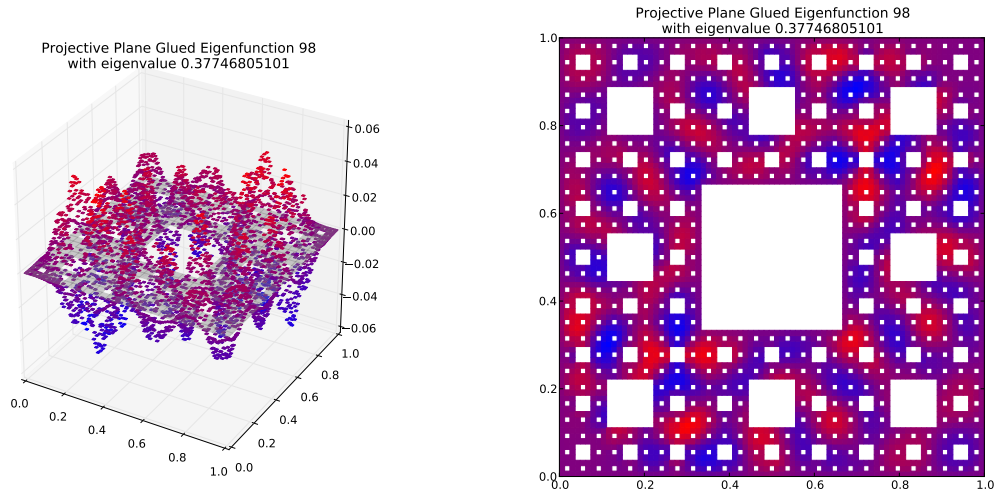
Compare to  $m = 3$  eigenspace with eigenvalue 2.1222352983  
(Note: Eigenspace Dimension  $> 1$ )



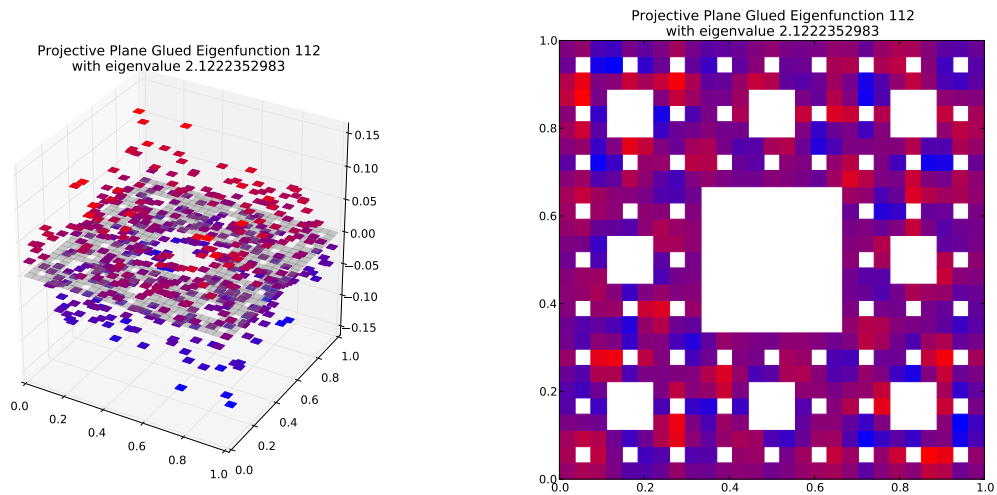
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.177863430748$   
Dot Value: 0.4235145981609033

## 99 $M = 4$ Eigenfunction 98

$M = 4$  Eigenfunction 98 has eigenvalue 0.37746805101



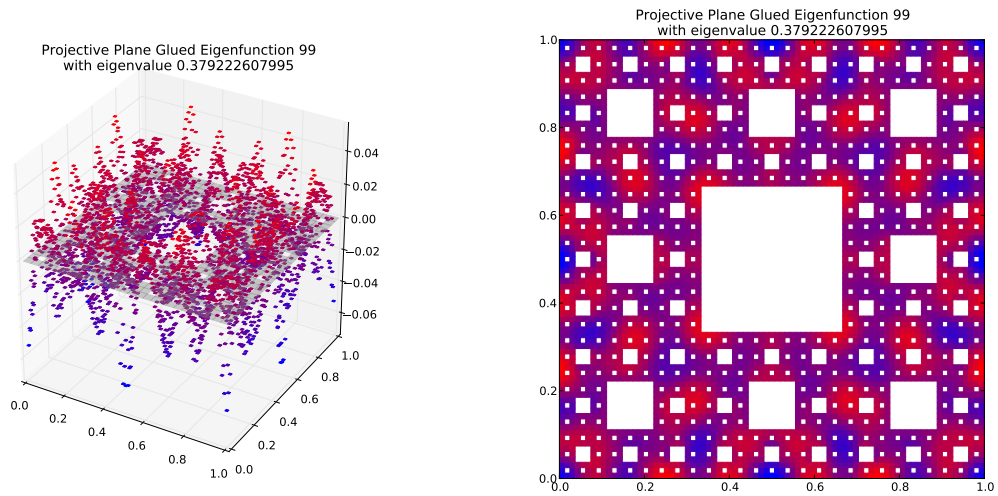
Compare to  $m = 3$  eigenspace with eigenvalue 2.1222352983  
(Note: Eigenspace Dimension  $> 1$ )



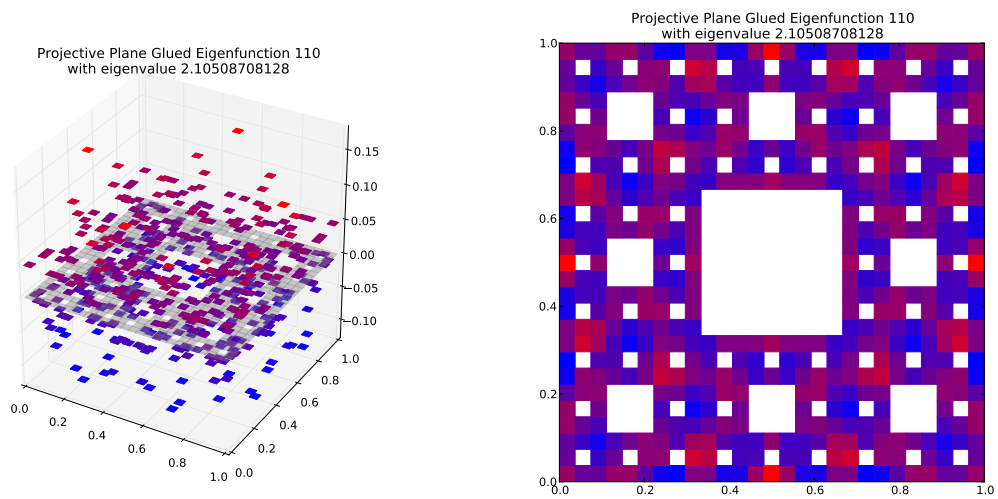
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.177863430748$   
Dot Value: 0.423514598160874

# 100 $M = 4$ Eigenfunction 99

$M = 4$  Eigenfunction 99 has eigenvalue 0.379222607995



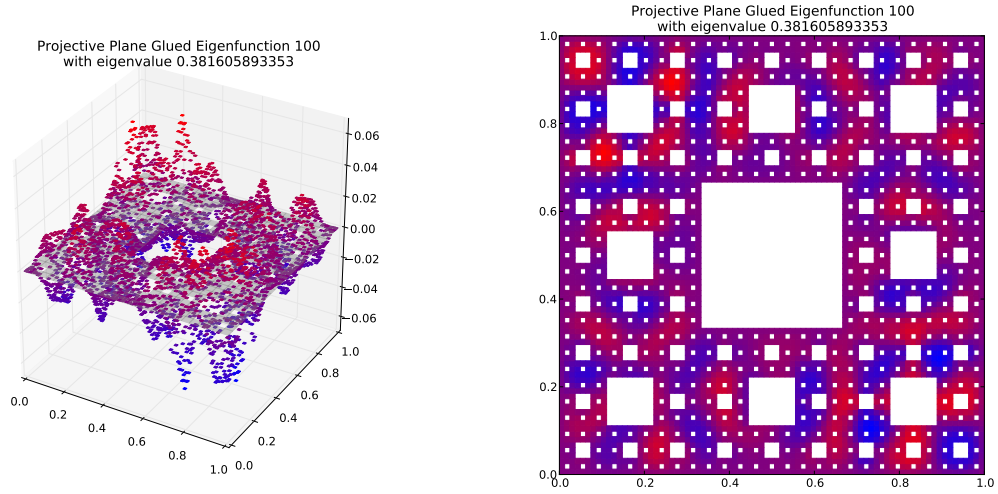
Compare to  $m = 3$  eigenspace with eigenvalue 2.10508708128



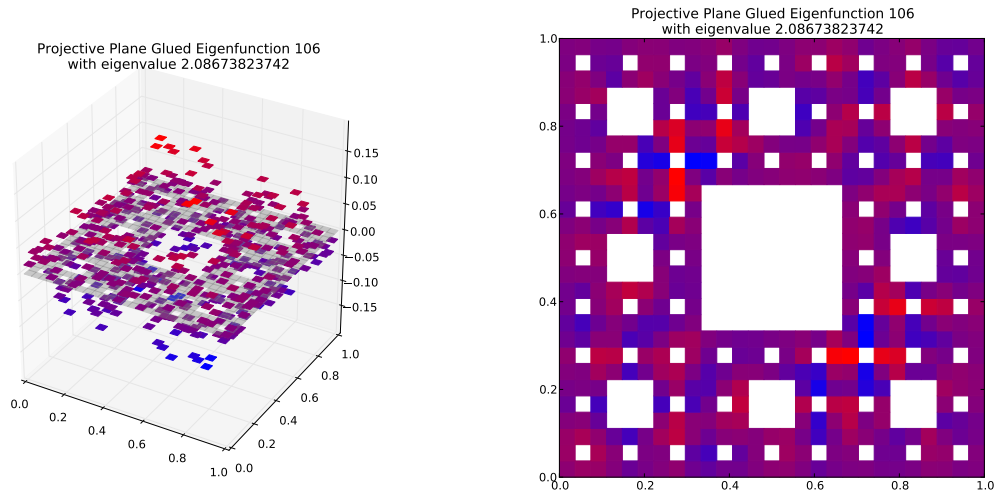
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180145805542$   
Dot Value: 0.14888551775159742

# 101 $M = 4$ Eigenfunction 100

$M = 4$  Eigenfunction 100 has eigenvalue 0.381605893353



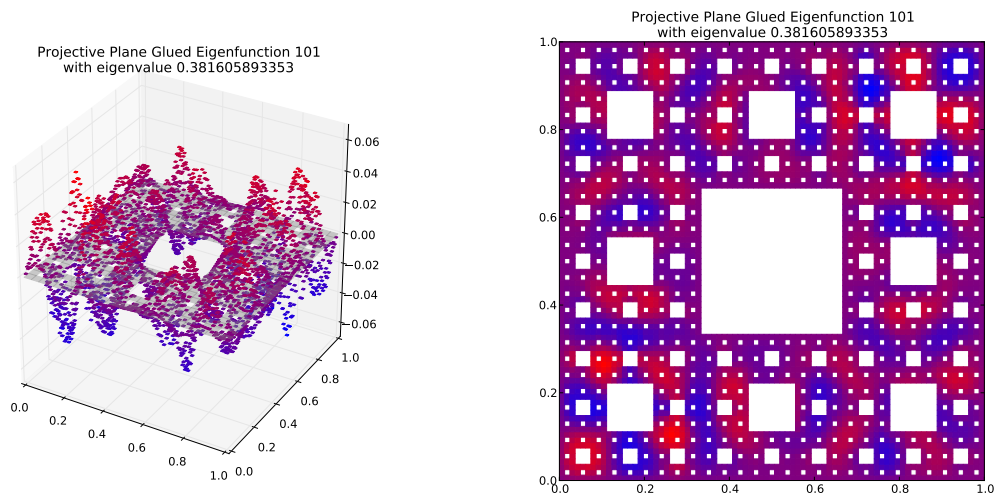
Compare to  $m = 3$  eigenspace with eigenvalue 2.08673823742  
(Note: Eigenspace Dimension  $> 1$ )



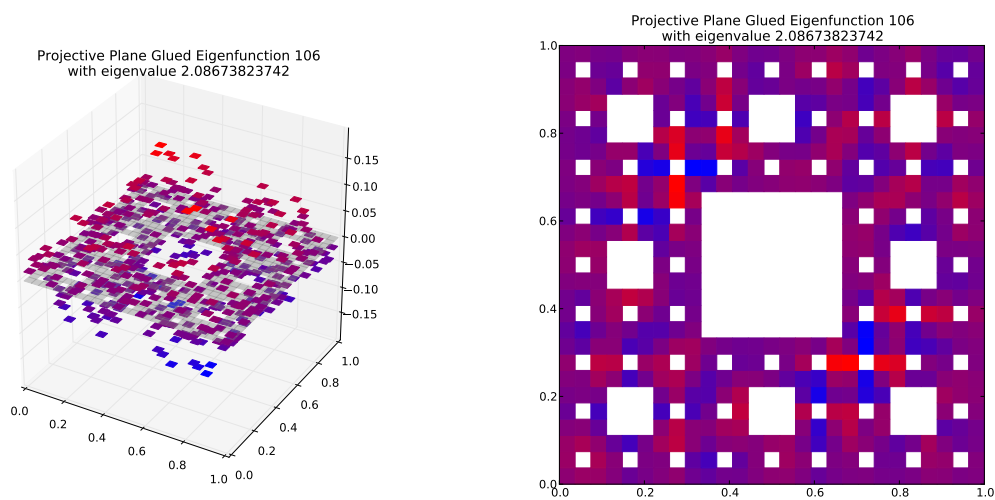
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.182871951312$   
Dot Value: 0.44432377303008563

## 102 $M = 4$ Eigenfunction 101

$M = 4$  Eigenfunction 101 has eigenvalue 0.381605893353



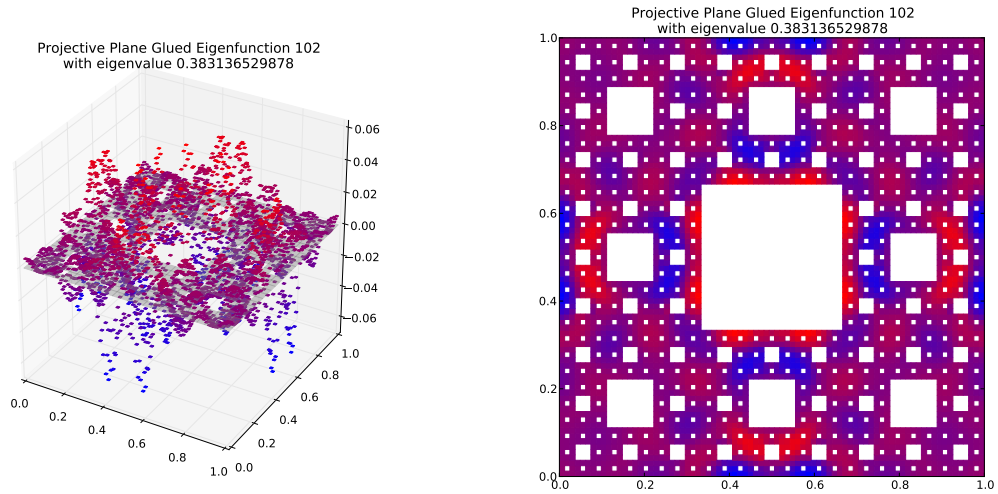
Compare to  $m = 3$  eigenspace with eigenvalue 2.08673823742  
(Note: Eigenspace Dimension  $> 1$ )



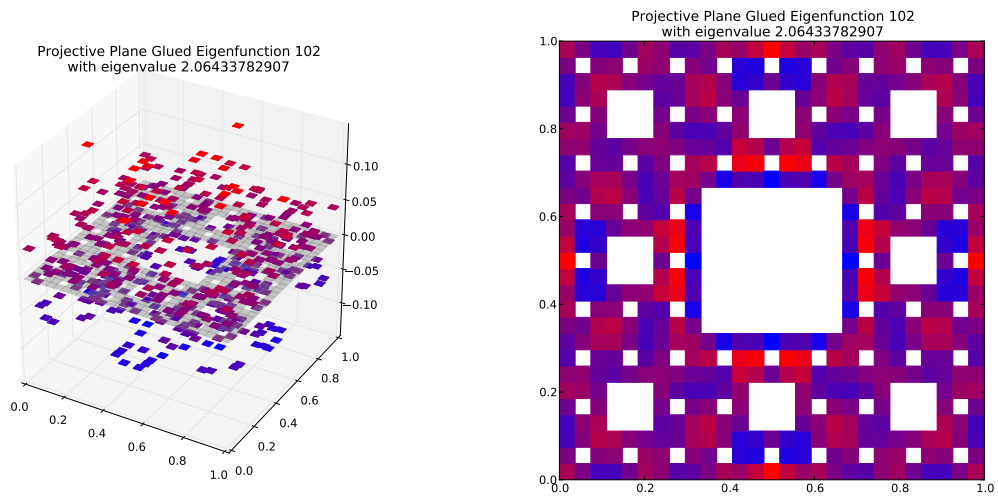
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.182871951312$   
Dot Value: 0.44432377303001536

# 103 $M = 4$ Eigenfunction 102

$M = 4$  Eigenfunction 102 has eigenvalue 0.383136529878



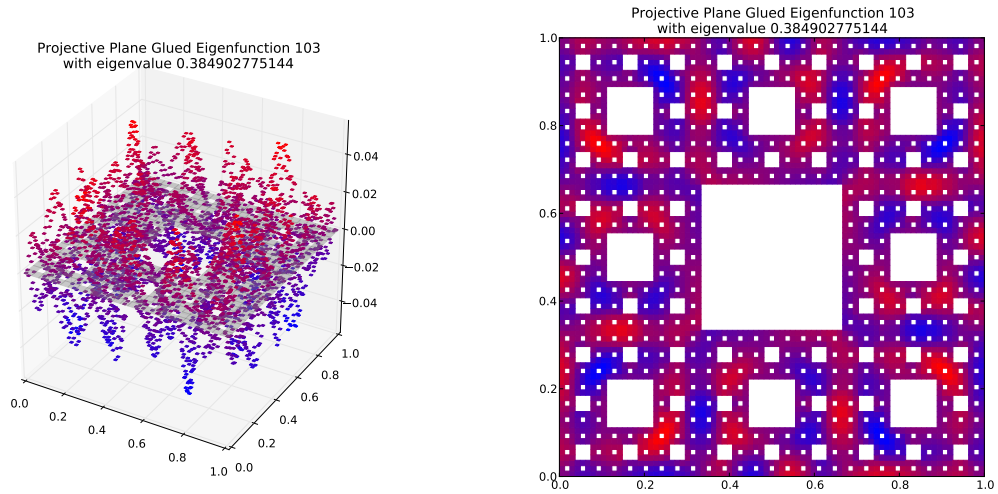
Compare to  $m = 3$  eigenspace with eigenvalue 2.06433782907



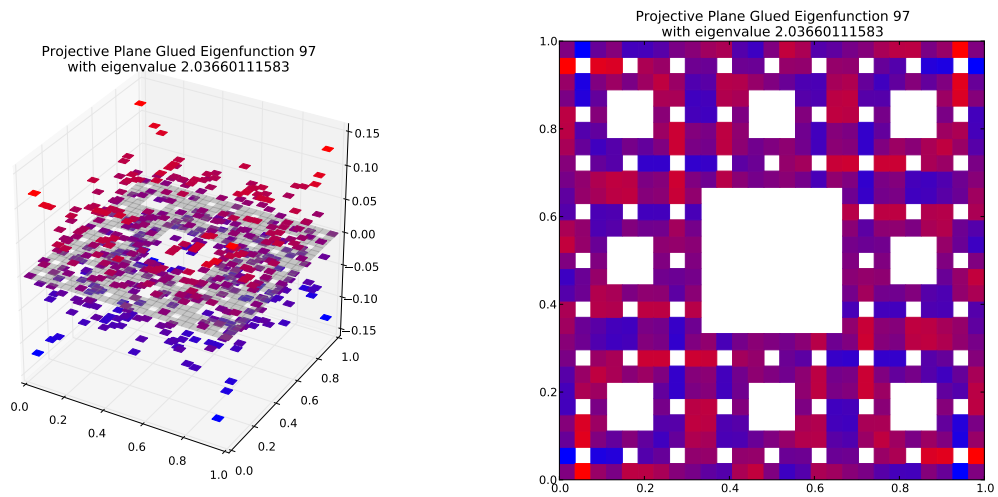
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185597785635$   
Dot Value: 0.2652655371304484

# 104 $M = 4$ Eigenfunction 103

$M = 4$  Eigenfunction 103 has eigenvalue 0.384902775144



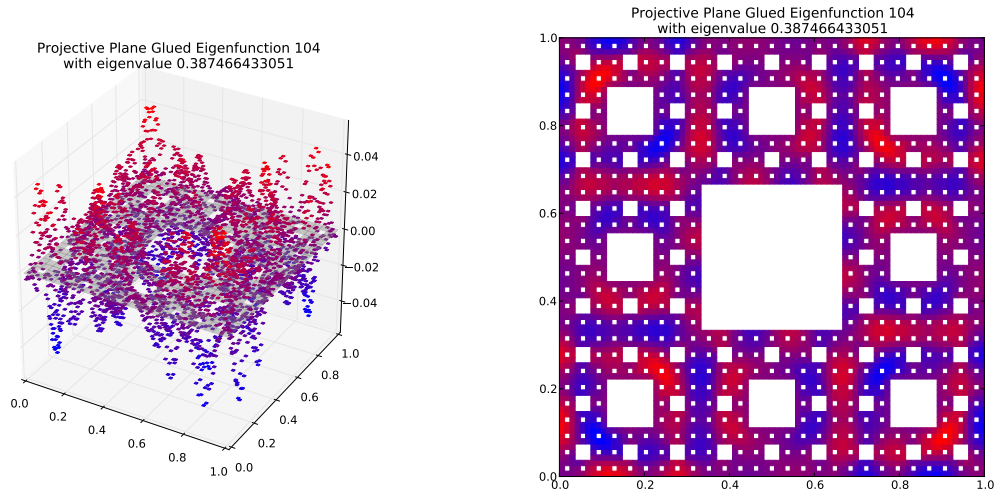
Compare to  $m = 3$  eigenspace with eigenvalue 2.03660111583



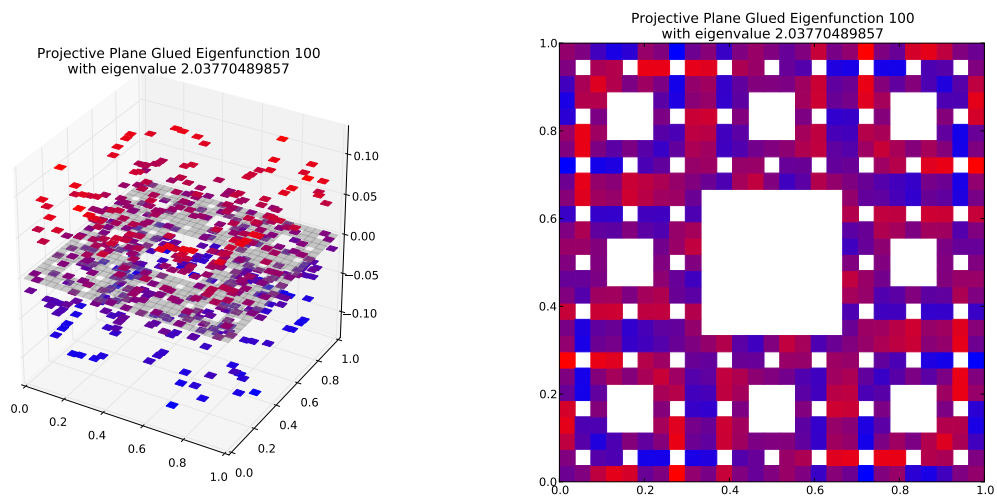
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.188992715437$   
Dot Value: 0.21062563679099078

# 105 $M = 4$ Eigenfunction 104

$M = 4$  Eigenfunction 104 has eigenvalue 0.387466433051



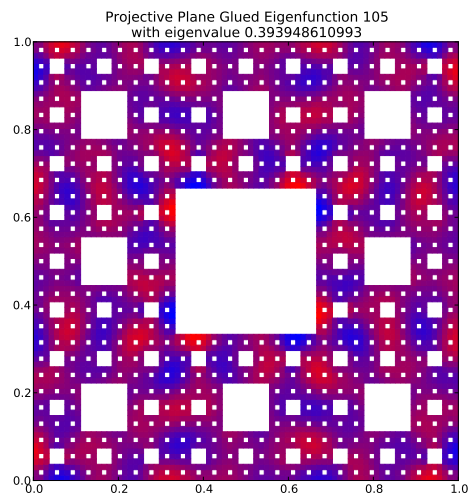
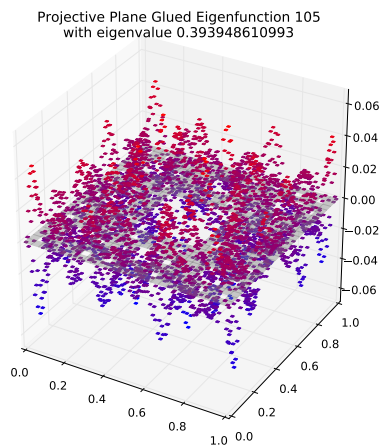
Compare to  $m = 3$  eigenspace with eigenvalue 2.03770489857



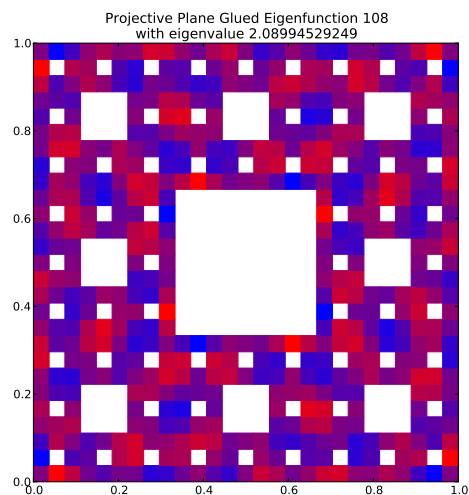
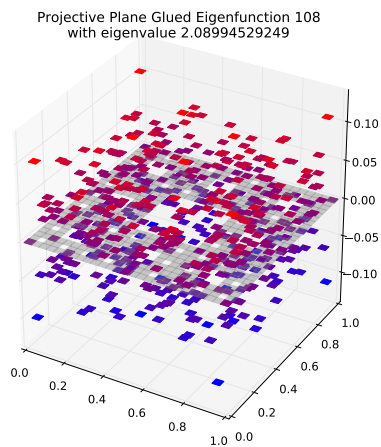
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.190148452469$   
Dot Value: 0.13254679999467223

# 106 $M = 4$ Eigenfunction 105

$M = 4$  Eigenfunction 105 has eigenvalue 0.393948610993



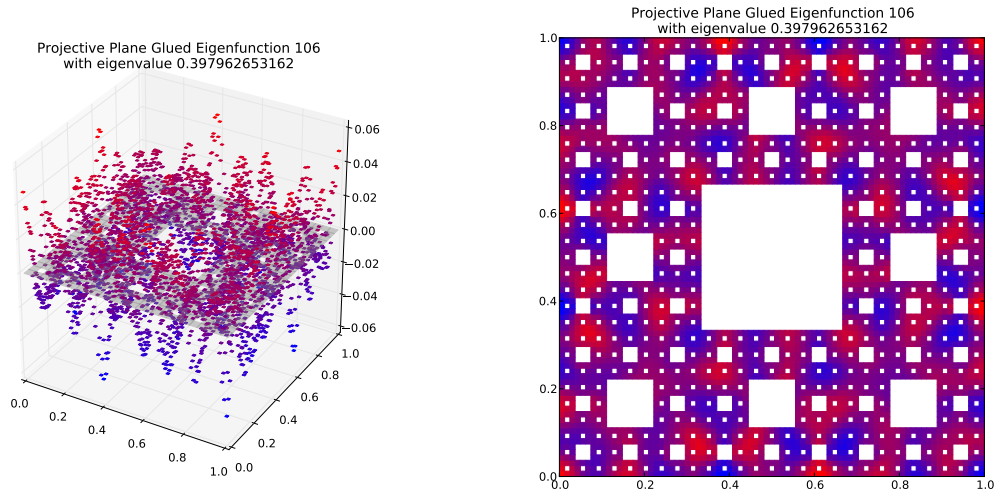
Compare to  $m = 3$  eigenspace with eigenvalue 2.08994529249



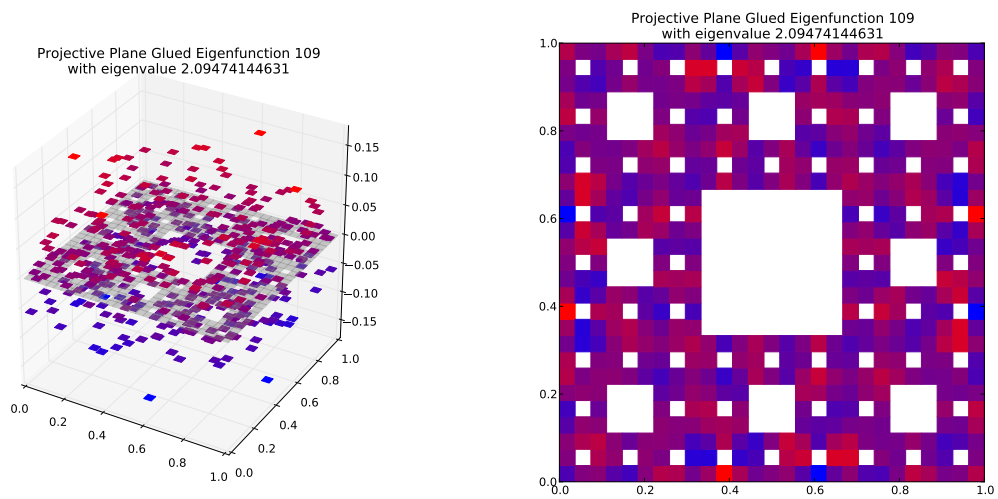
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18849709244$   
Dot Value: 0.1566269052426763

# 107 $M = 4$ Eigenfunction 106

$M = 4$  Eigenfunction 106 has eigenvalue 0.397962653162



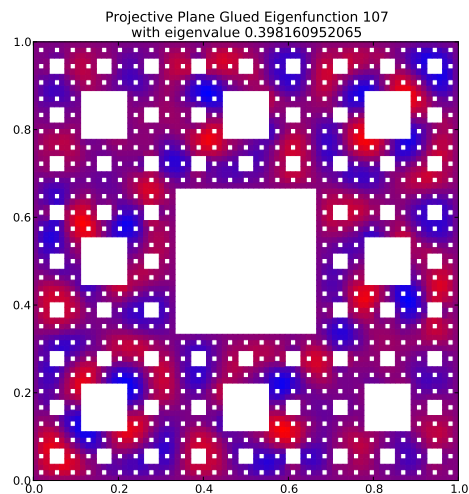
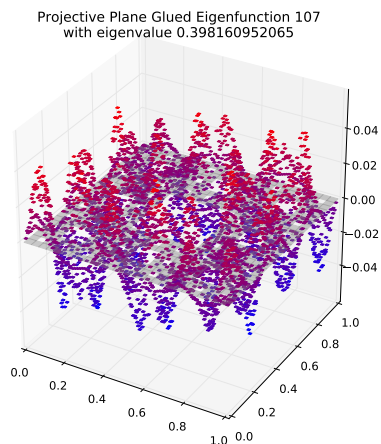
Compare to  $m = 3$  eigenspace with eigenvalue 2.09474144631



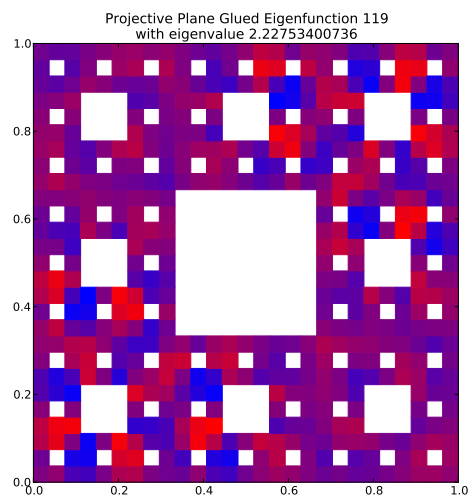
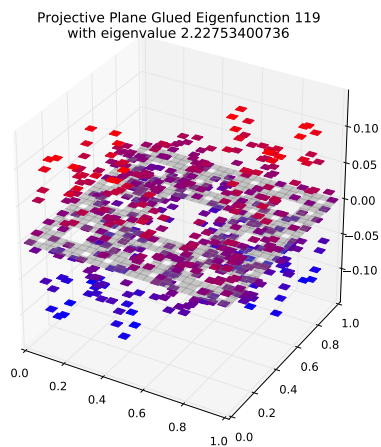
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18998175353$   
Dot Value: 0.07809589186219568

# 108 $M = 4$ Eigenfunction 107

$M = 4$  Eigenfunction 107 has eigenvalue 0.398160952065



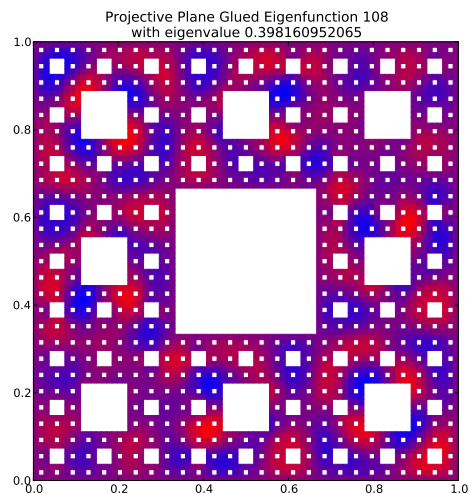
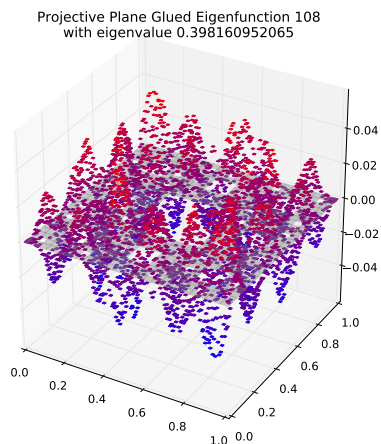
Compare to  $m = 3$  eigenspace with eigenvalue 2.22753400736  
(Note: Eigenspace Dimension  $> 1$ )



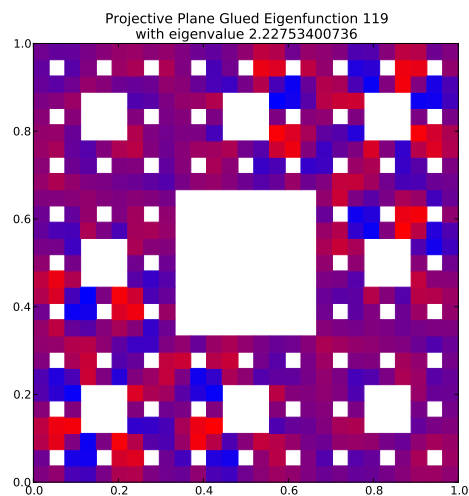
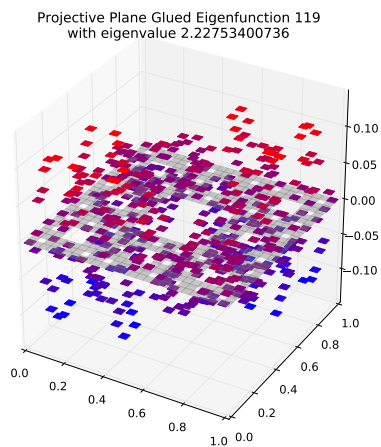
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.17874517325$   
Dot Value: 0.2708428424246543

# 109 $M = 4$ Eigenfunction 108

$M = 4$  Eigenfunction 108 has eigenvalue 0.398160952065



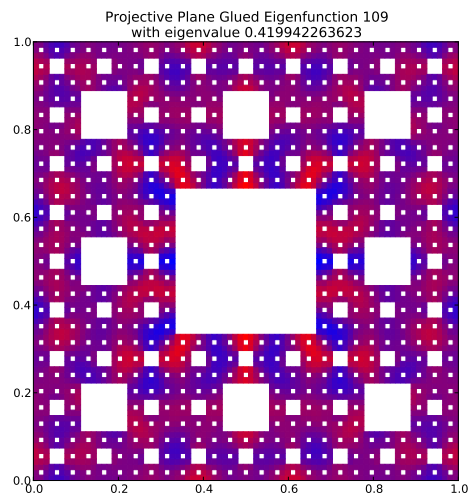
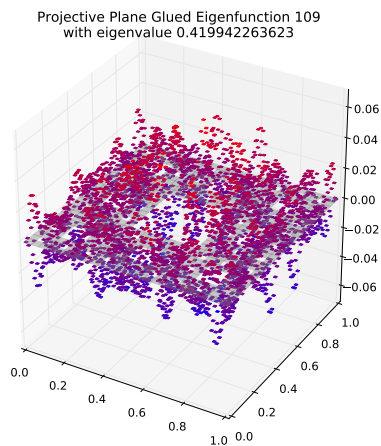
Compare to  $m = 3$  eigenspace with eigenvalue 2.22753400736  
(Note: Eigenspace Dimension  $> 1$ )



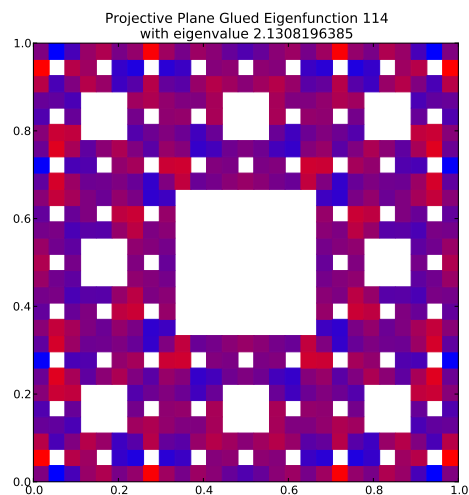
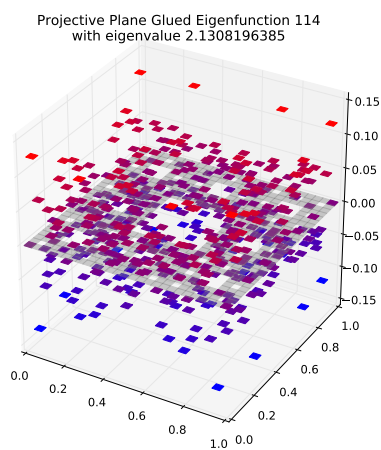
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.17874517325$   
Dot Value: 0.27084284242467316

# 110 $M = 4$ Eigenfunction 109

$M = 4$  Eigenfunction 109 has eigenvalue 0.419942263623



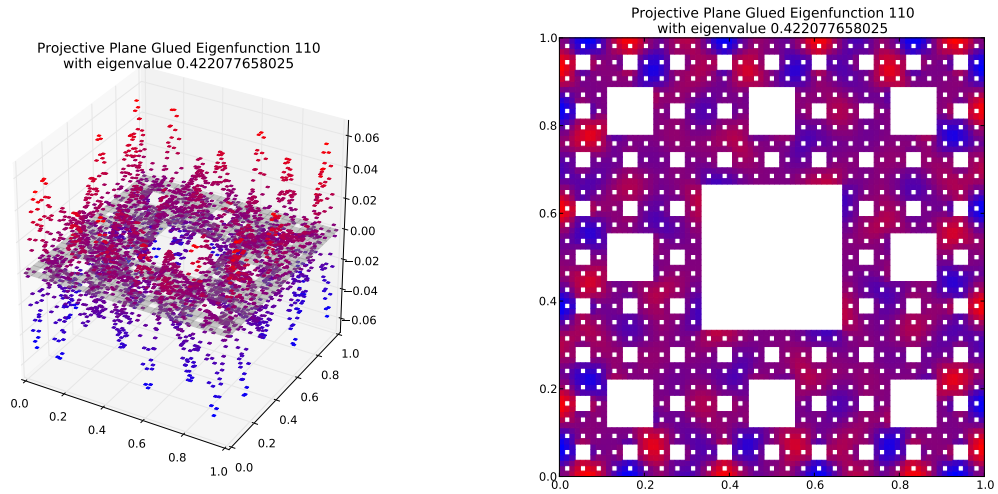
Compare to  $m = 3$  eigenspace with eigenvalue 2.1308196385



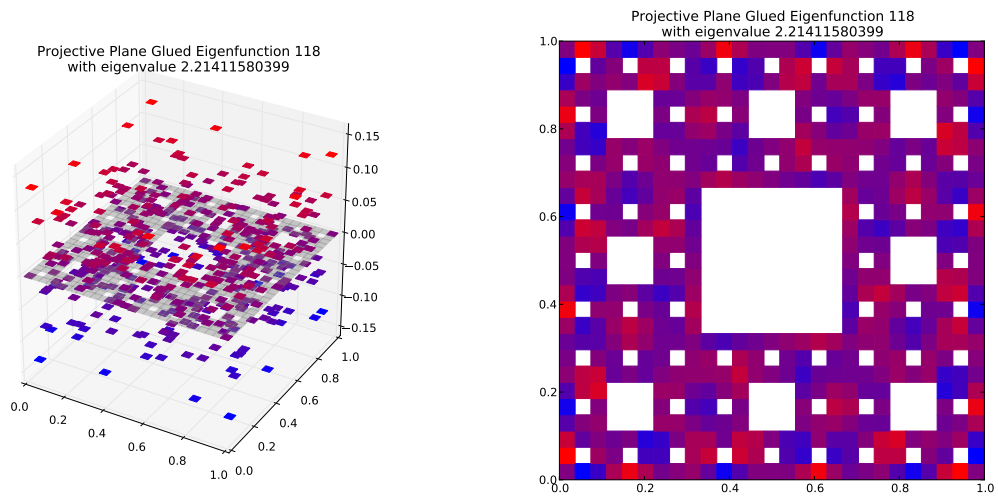
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.197080154526$   
Dot Value: 0.39339865065973645

# 111 $M = 4$ Eigenfunction 110

$M = 4$  Eigenfunction 110 has eigenvalue 0.422077658025



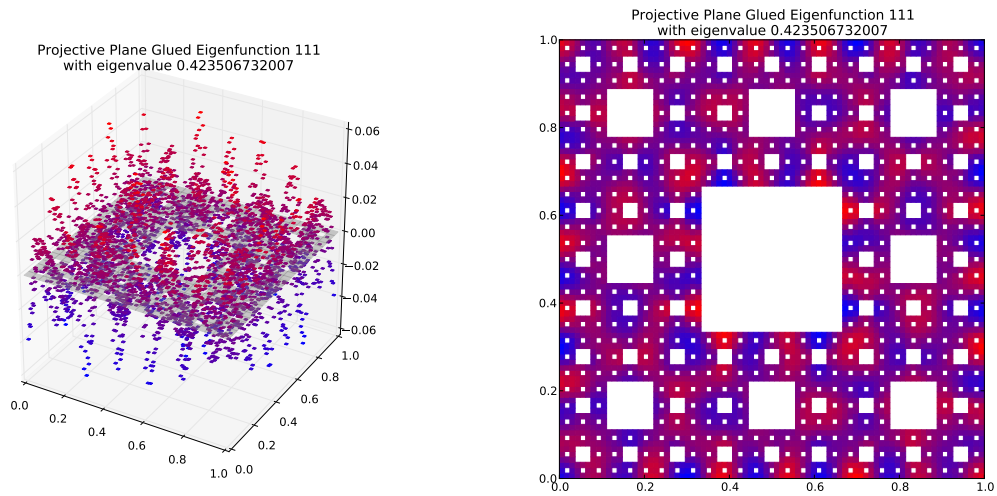
Compare to  $m = 3$  eigenspace with eigenvalue 2.21411580399



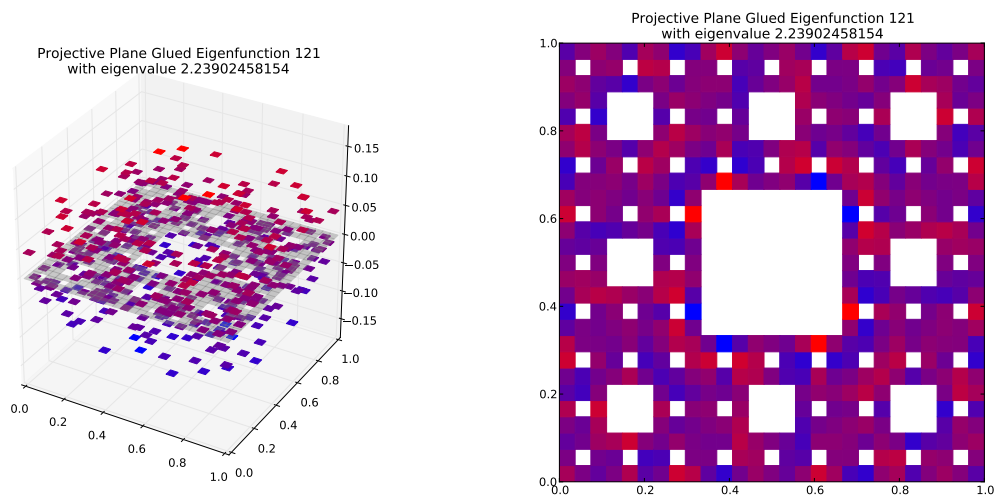
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.190630344295$   
Dot Value: 0.044914812821593375

## 112 $M = 4$ Eigenfunction 111

$M = 4$  Eigenfunction 111 has eigenvalue 0.423506732007



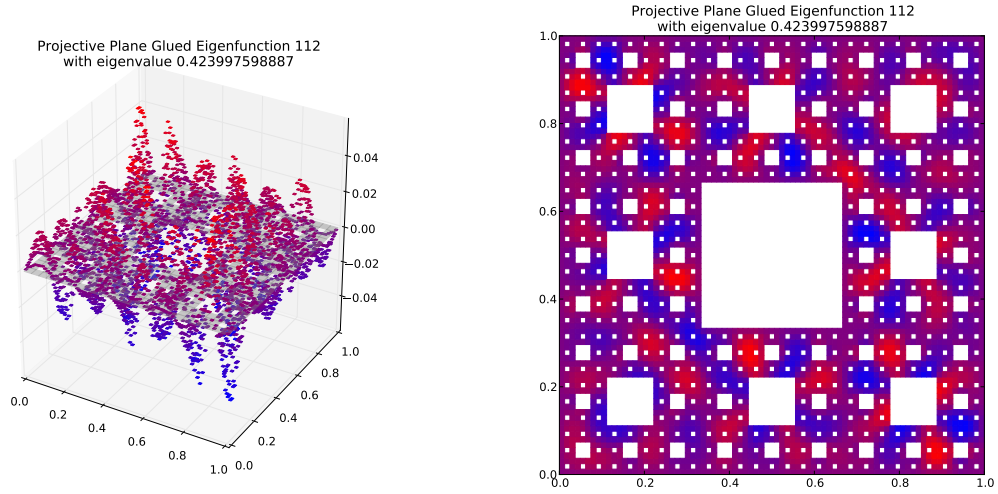
Compare to  $m = 3$  eigenspace with eigenvalue 2.23902458154



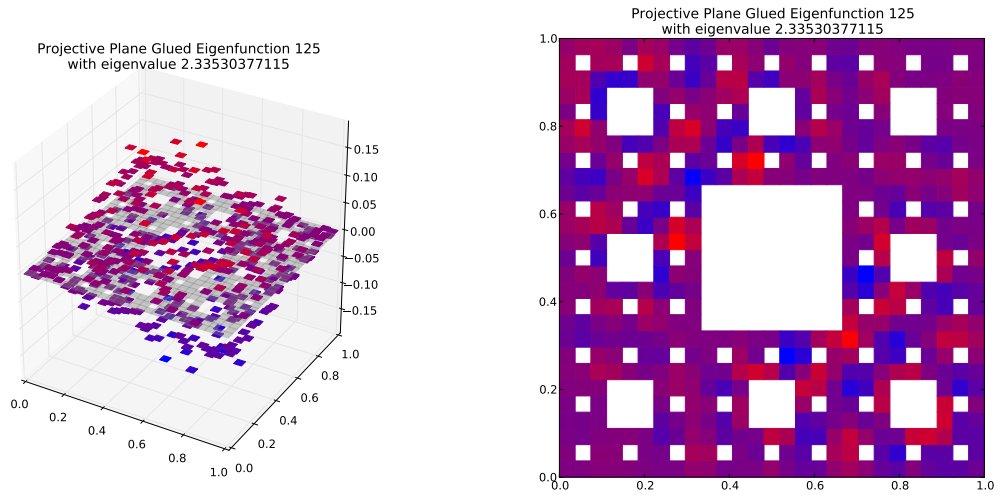
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.189147870684$   
Dot Value: 0.19808868088081266

# 113 $M = 4$ Eigenfunction 112

$M = 4$  Eigenfunction 112 has eigenvalue 0.423997598887



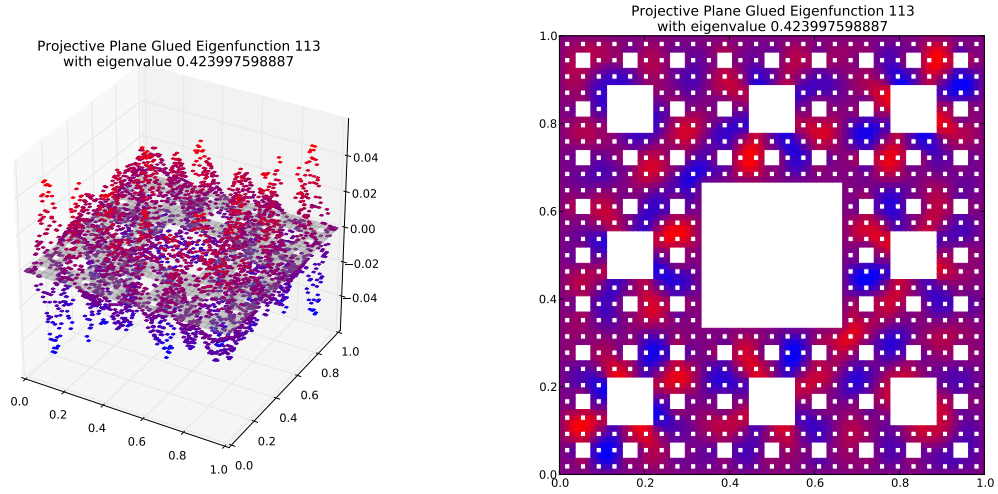
Compare to  $m = 3$  eigenspace with eigenvalue 2.33530377115  
(Note: Eigenspace Dimension  $> 1$ )



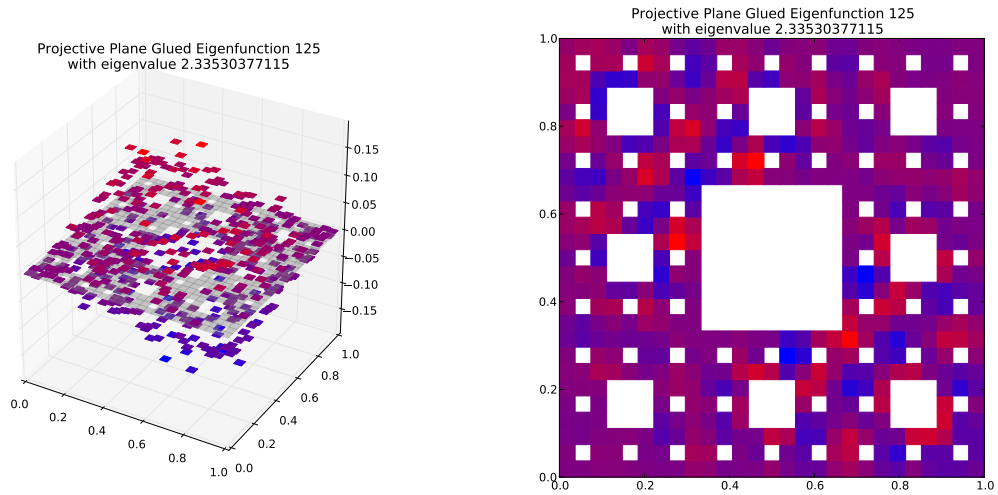
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18155993414$   
Dot Value: 0.32465573682249826

# 114 $M = 4$ Eigenfunction 113

$M = 4$  Eigenfunction 113 has eigenvalue 0.423997598887



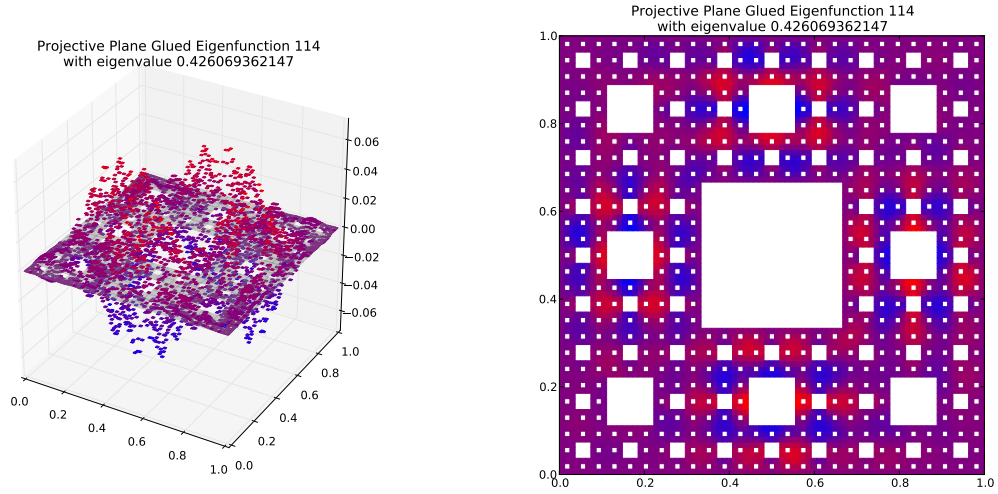
Compare to  $m = 3$  eigenspace with eigenvalue 2.33530377115  
(Note: Eigenspace Dimension  $> 1$ )



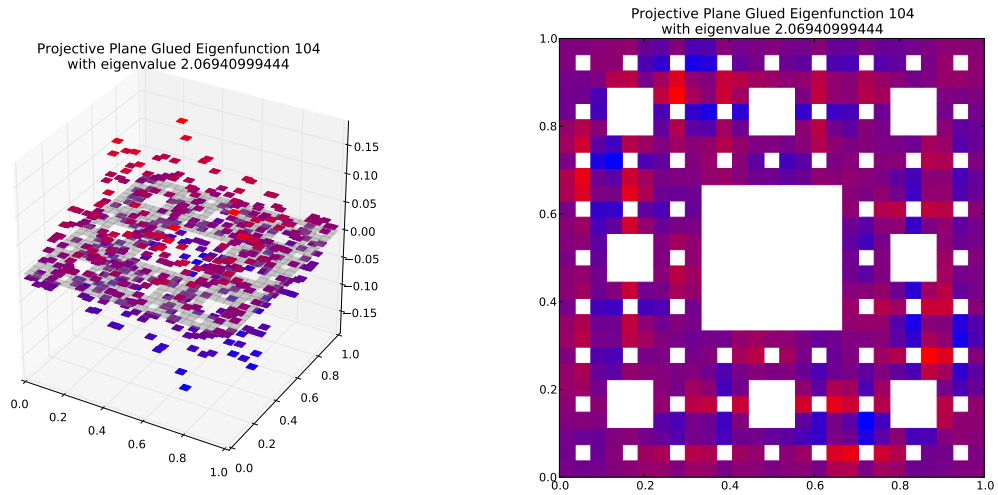
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18155993414$   
Dot Value: 0.3246557368225267

# 115 $M = 4$ Eigenfunction 114

$M = 4$  Eigenfunction 114 has eigenvalue 0.426069362148



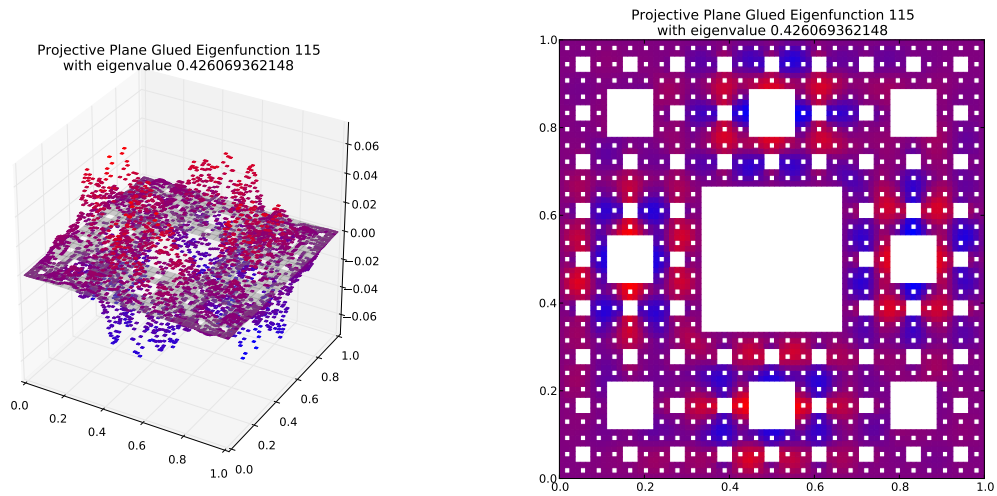
Compare to  $m = 3$  eigenspace with eigenvalue 2.06940999444  
(Note: Eigenspace Dimension  $> 1$ )



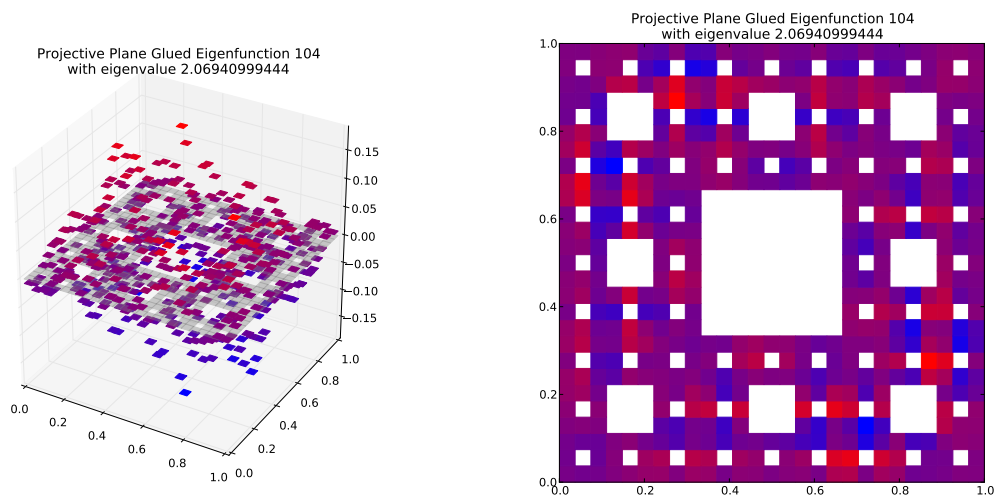
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.205889293708$   
Dot Value: 0.3641328212033109

# 116 $M = 4$ Eigenfunction 115

$M = 4$  Eigenfunction 115 has eigenvalue 0.426069362148



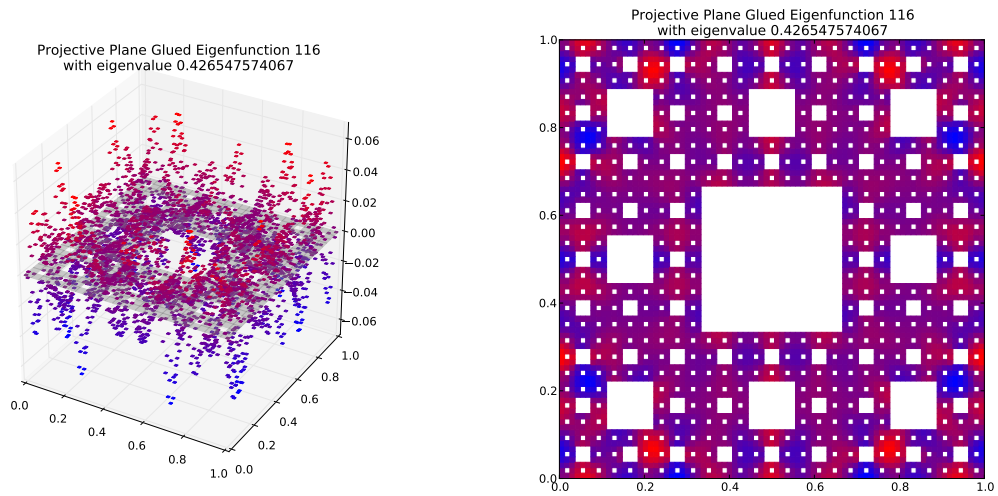
Compare to  $m = 3$  eigenspace with eigenvalue 2.06940999444  
(Note: Eigenspace Dimension  $> 1$ )



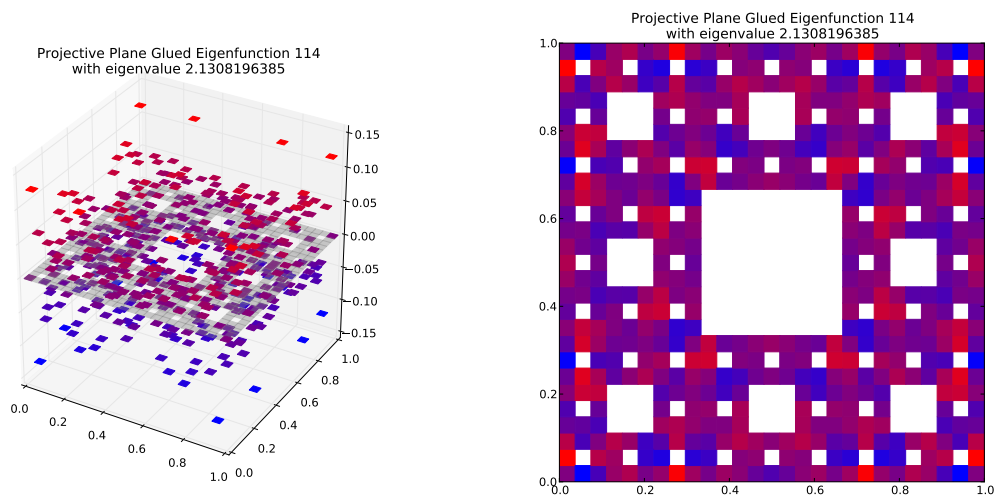
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.205889293708$   
Dot Value: 0.36413282120316337

# 117 $M = 4$ Eigenfunction 116

$M = 4$  Eigenfunction 116 has eigenvalue 0.426547574067



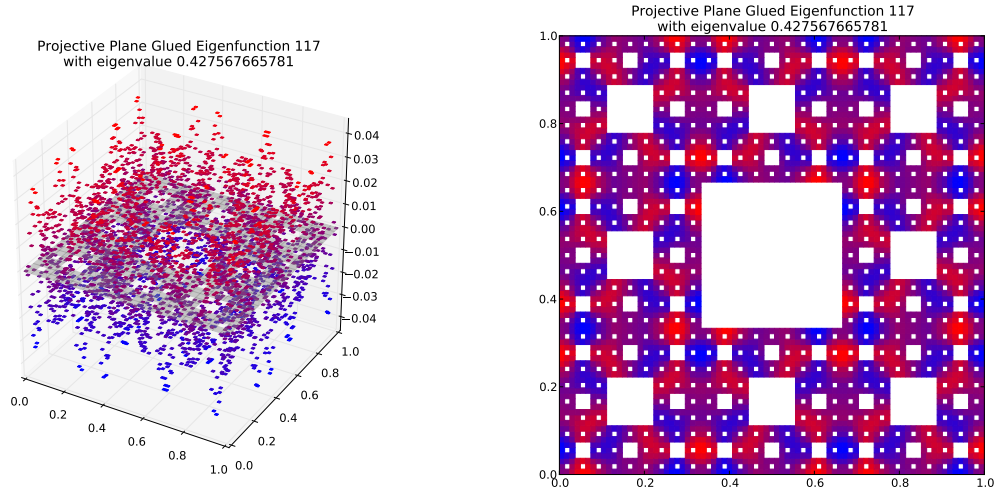
Compare to  $m = 3$  eigenspace with eigenvalue 2.1308196385



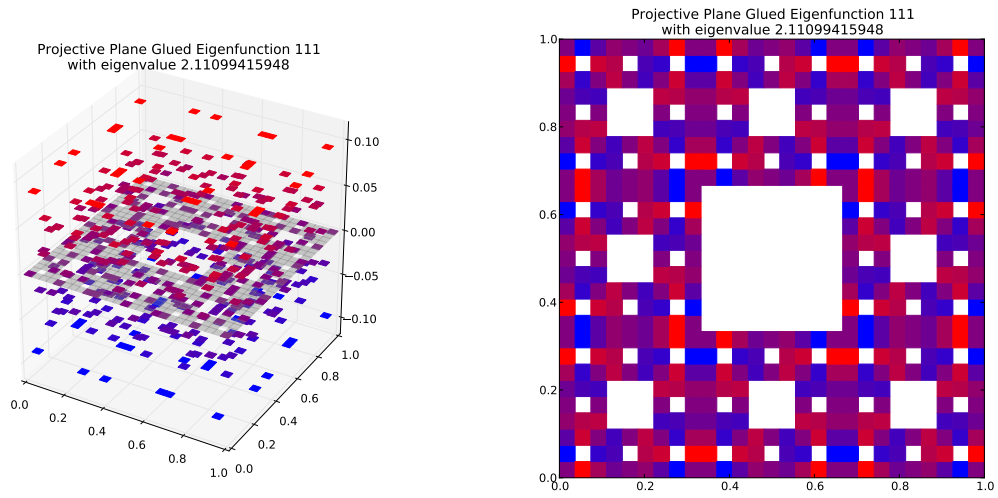
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.200180046382$   
Dot Value: 0.27512304593657044

# 118 $M = 4$ Eigenfunction 117

$M = 4$  Eigenfunction 117 has eigenvalue 0.427567665781



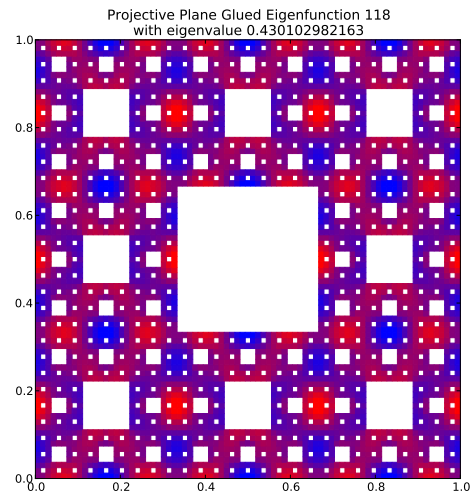
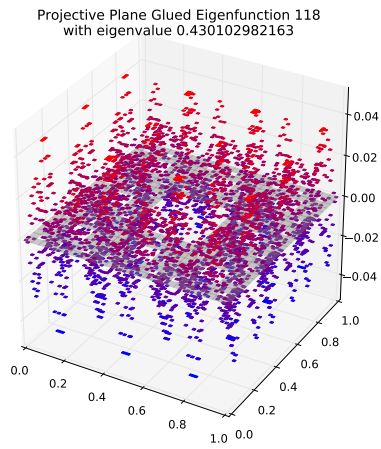
Compare to  $m = 3$  eigenspace with eigenvalue 2.11099415948



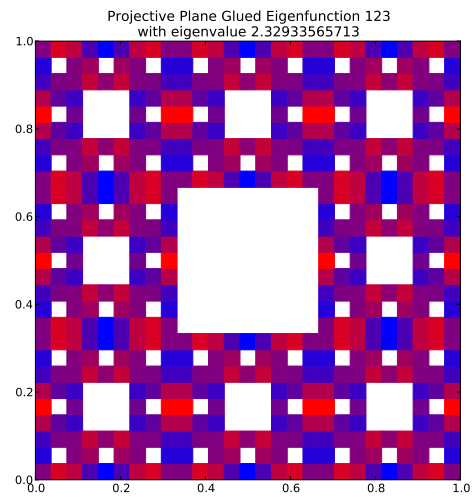
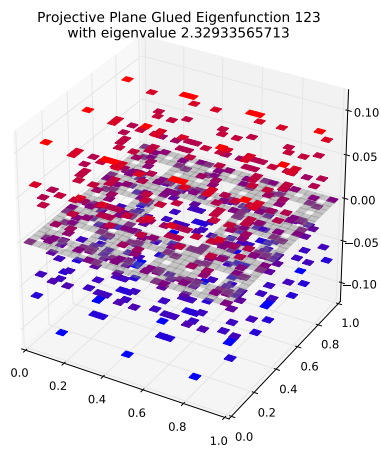
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.202543272733$   
Dot Value: 0.007310975902897976

# 119 $M = 4$ Eigenfunction 118

$M = 4$  Eigenfunction 118 has eigenvalue 0.430102982163



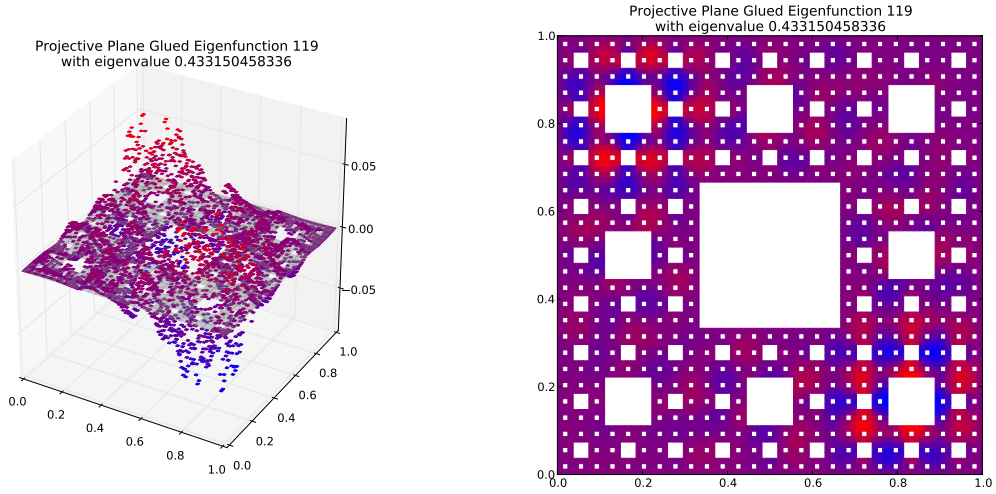
Compare to  $m = 3$  eigenspace with eigenvalue 2.32933565713



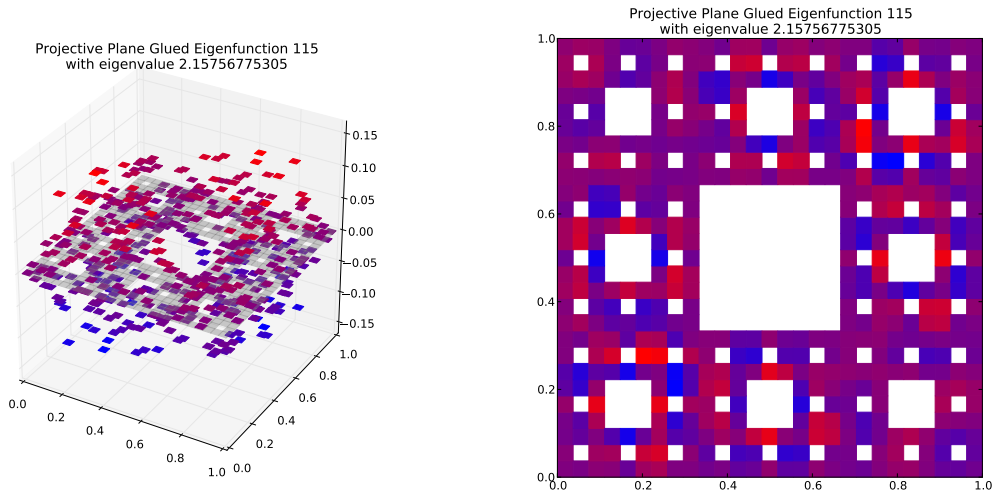
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.184646201953$   
Dot Value: 0.011445548696592867

# 120 $M = 4$ Eigenfunction 119

$M = 4$  Eigenfunction 119 has eigenvalue 0.433150458336



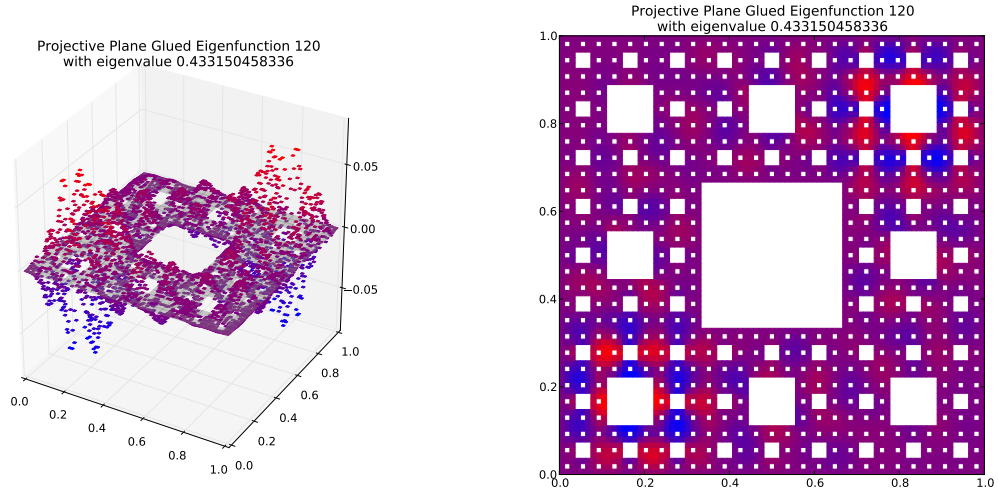
Compare to  $m = 3$  eigenspace with eigenvalue 2.15756775305  
(Note: Eigenspace Dimension  $> 1$ )



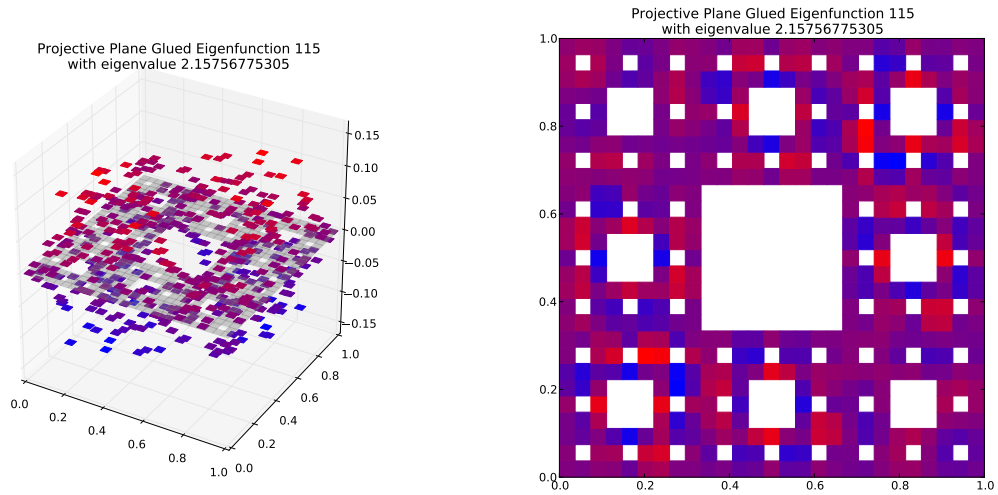
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.200758681957$   
Dot Value: 0.38839885463951884

# 121 $M = 4$ Eigenfunction 120

$M = 4$  Eigenfunction 120 has eigenvalue 0.433150458336



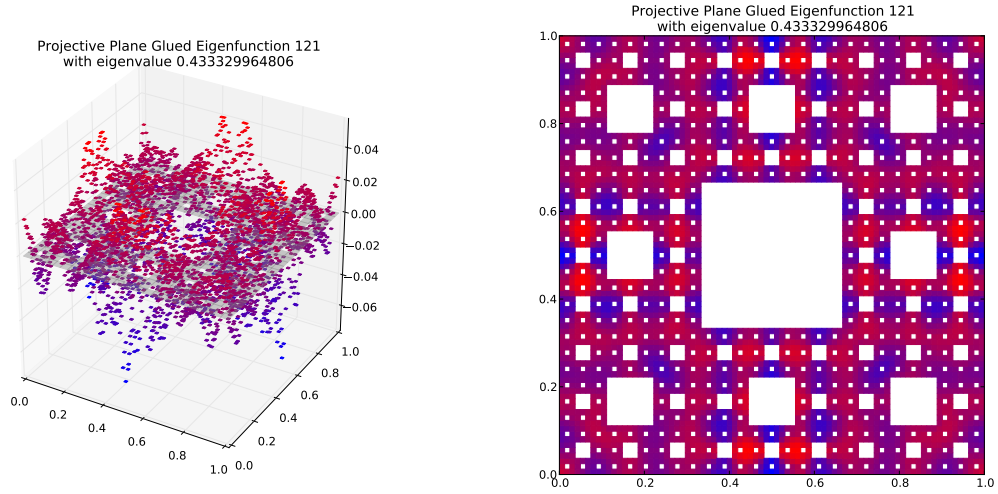
Compare to  $m = 3$  eigenspace with eigenvalue 2.15756775305  
(Note: Eigenspace Dimension  $> 1$ )



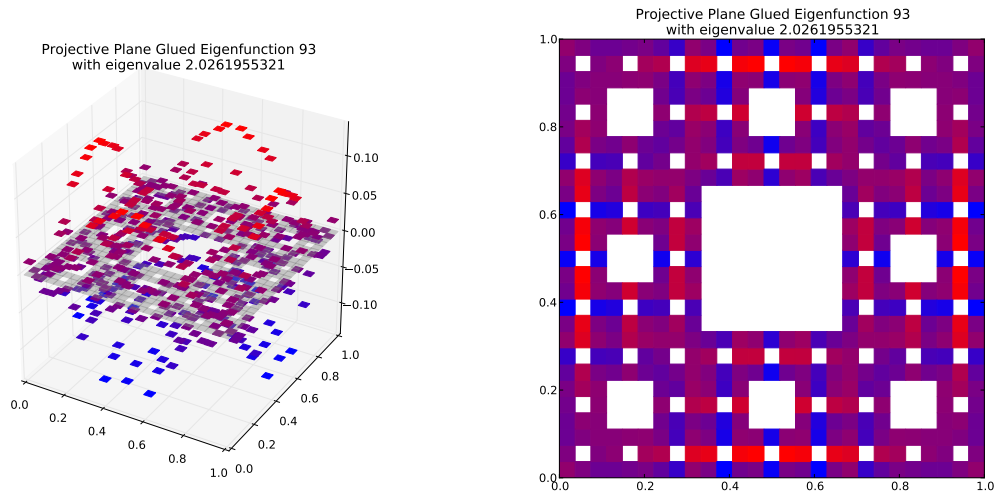
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.200758681957$   
Dot Value: 0.3883988546395619

## 122 $M = 4$ Eigenfunction 121

$M = 4$  Eigenfunction 121 has eigenvalue 0.433329964806



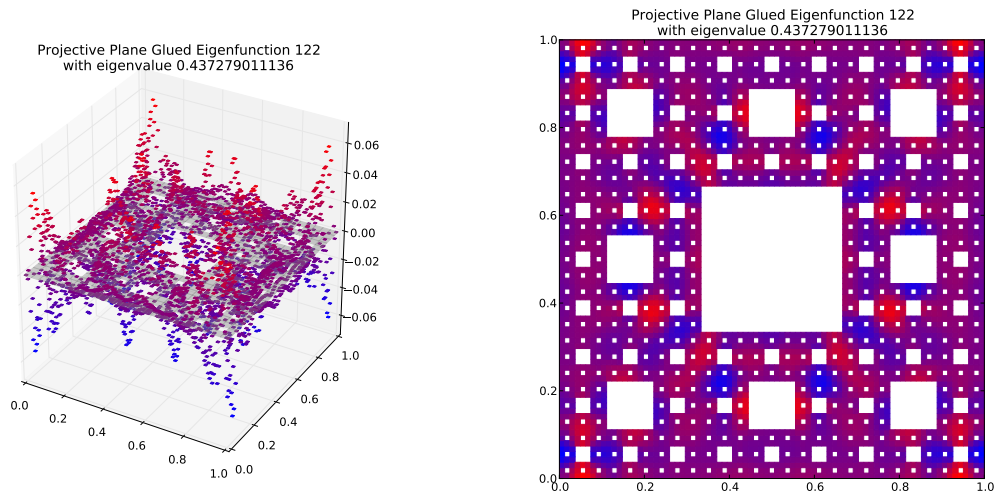
Compare to  $m = 3$  eigenspace with eigenvalue 2.0261955321



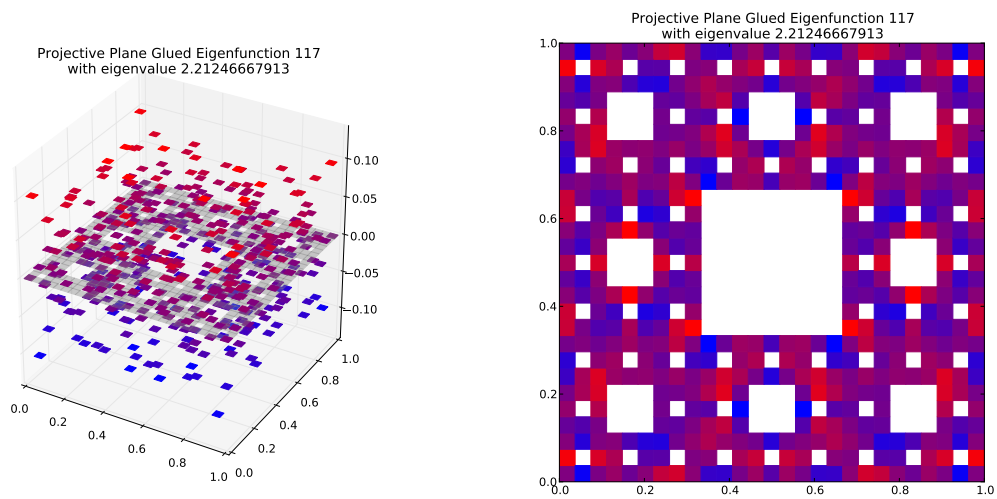
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.21386384381$   
Dot Value: 0.16787584929791843

## 123 $M = 4$ Eigenfunction 122

$M = 4$  Eigenfunction 122 has eigenvalue 0.437279011136



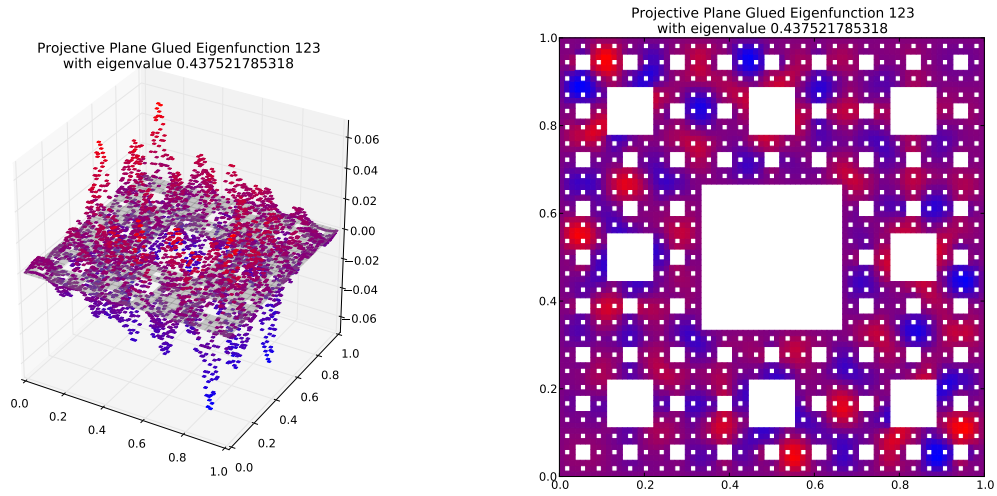
Compare to  $m = 3$  eigenspace with eigenvalue 2.21246667913



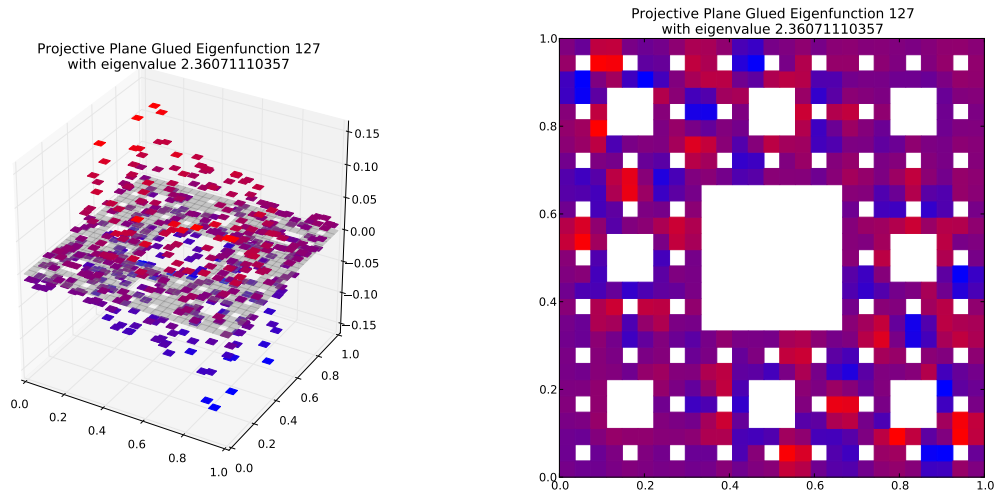
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.197643207584$   
Dot Value: 0.36024448245527296

# 124 $M = 4$ Eigenfunction 123

$M = 4$  Eigenfunction 123 has eigenvalue 0.437521785318



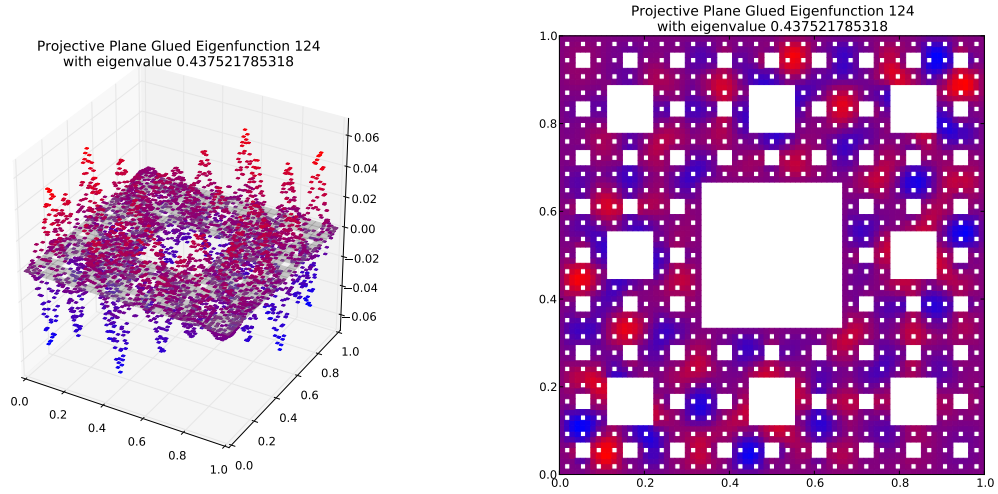
Compare to  $m = 3$  eigenspace with eigenvalue 2.36071110357  
(Note: Eigenspace Dimension  $> 1$ )



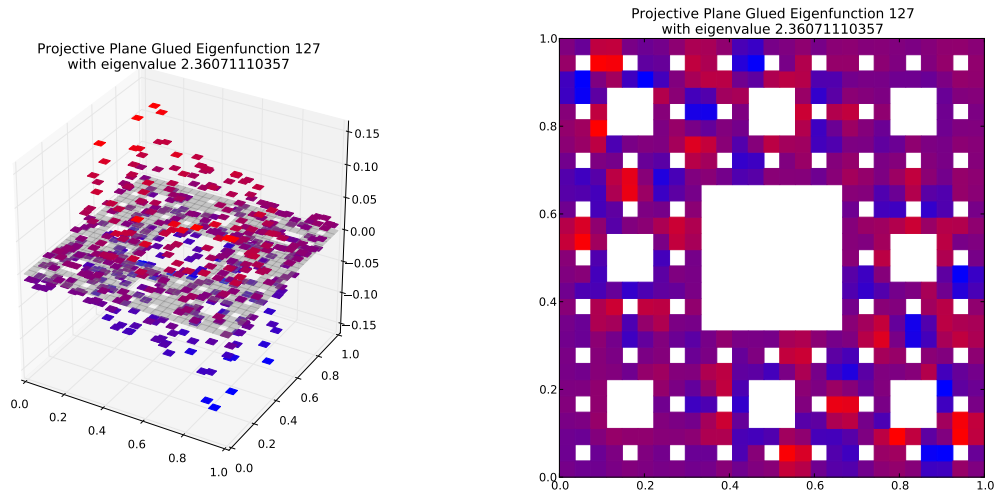
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185334742848$   
Dot Value: 0.08343859445796631

# 125 $M = 4$ Eigenfunction 124

$M = 4$  Eigenfunction 124 has eigenvalue 0.437521785318



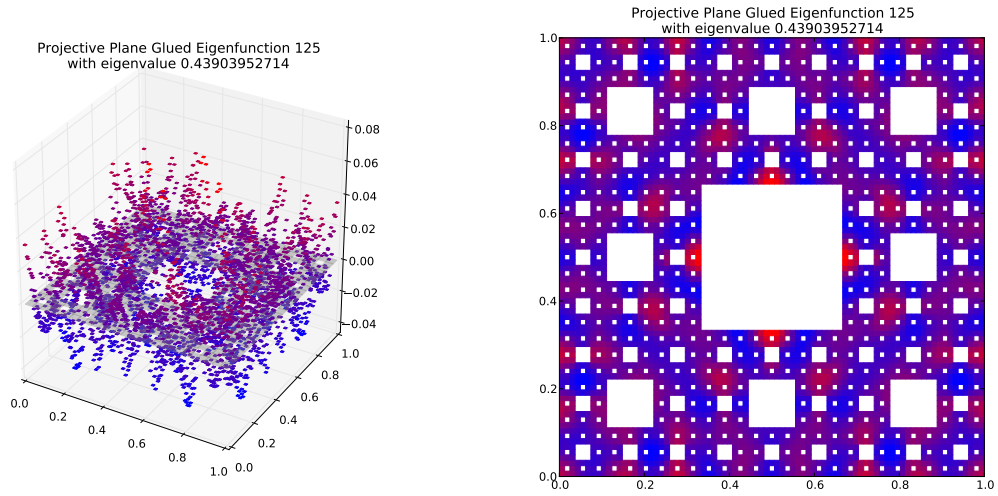
Compare to  $m = 3$  eigenspace with eigenvalue 2.36071110357  
(Note: Eigenspace Dimension  $> 1$ )



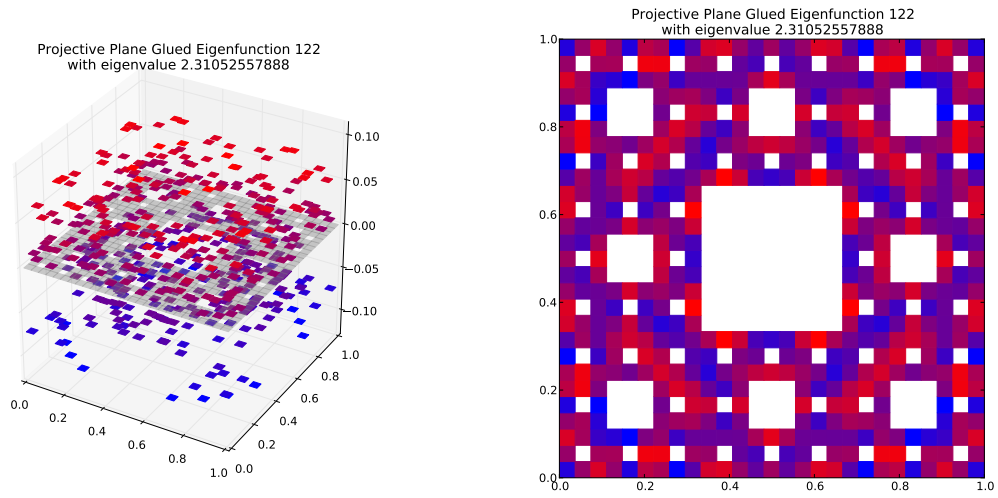
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185334742848$   
Dot Value: 0.083438594457939

# 126 $M = 4$ Eigenfunction 125

$M = 4$  Eigenfunction 125 has eigenvalue 0.43903952714



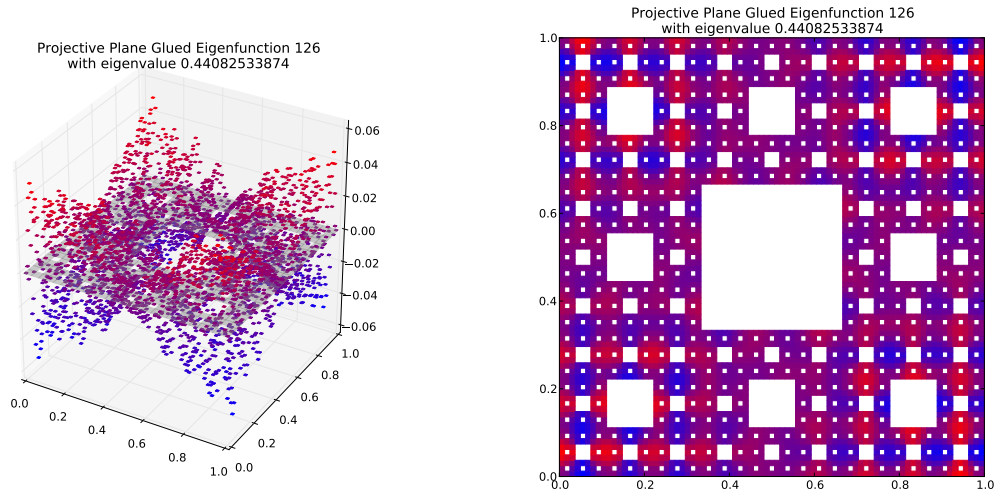
Compare to  $m = 3$  eigenspace with eigenvalue 2.31052557888



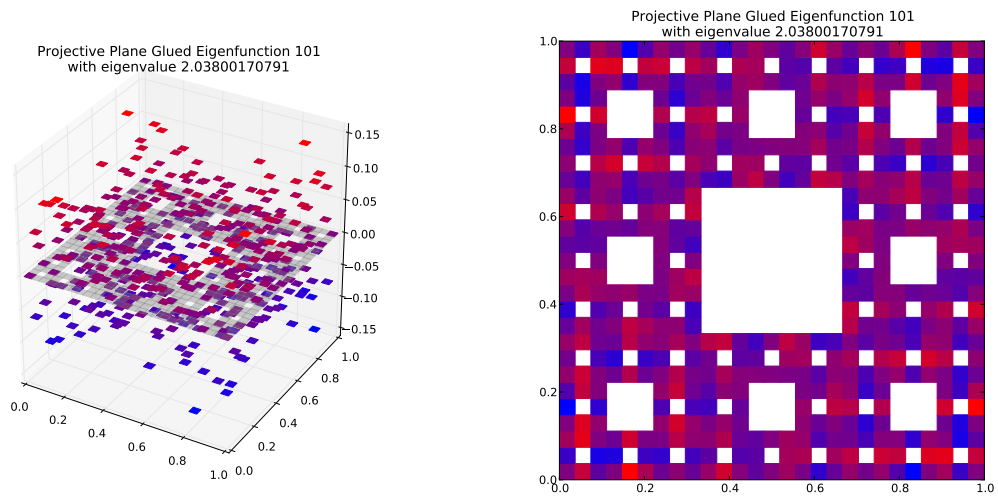
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.190017168021$   
Dot Value: 0.27066991749786773

# 127 $M = 4$ Eigenfunction 126

$M = 4$  Eigenfunction 126 has eigenvalue 0.44082533874



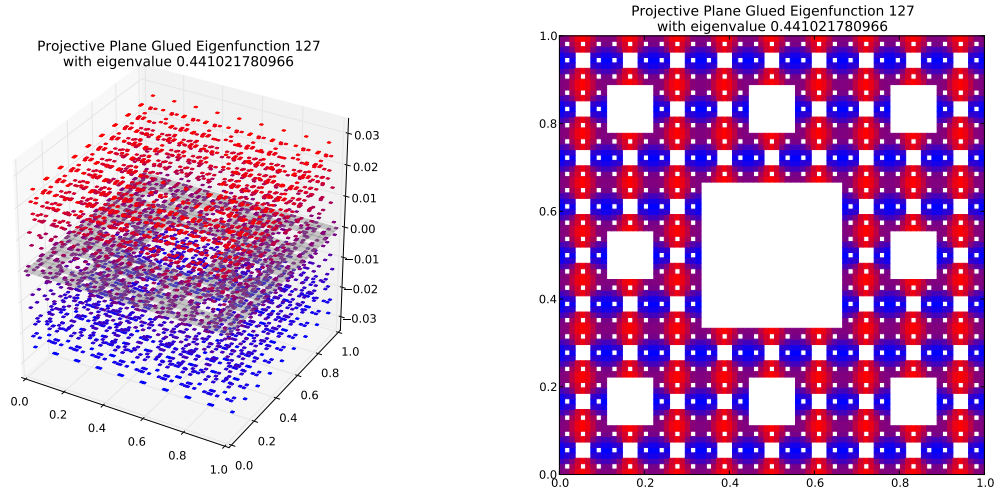
Compare to  $m = 3$  eigenspace with eigenvalue 2.03800170791



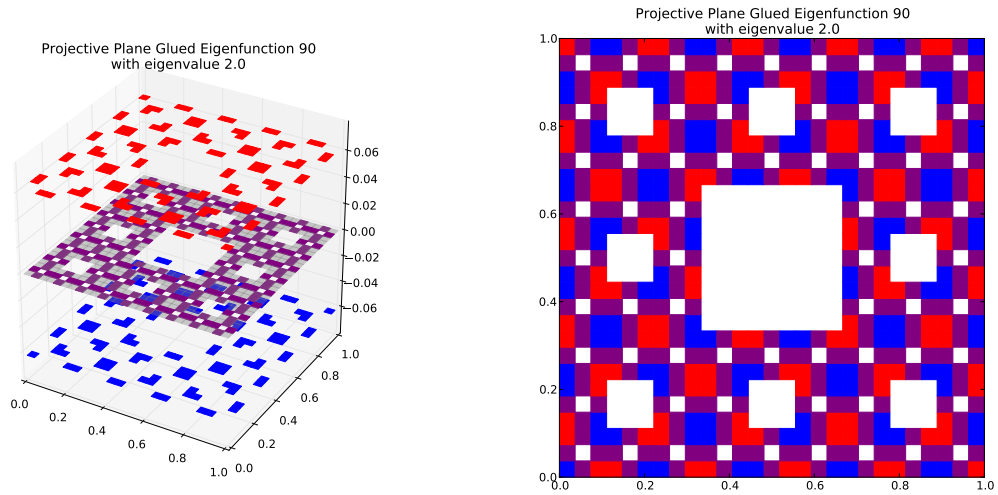
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.216302732735$   
Dot Value: 0.13976969887845048

# 128 $M = 4$ Eigenfunction 127

$M = 4$  Eigenfunction 127 has eigenvalue 0.441021780966



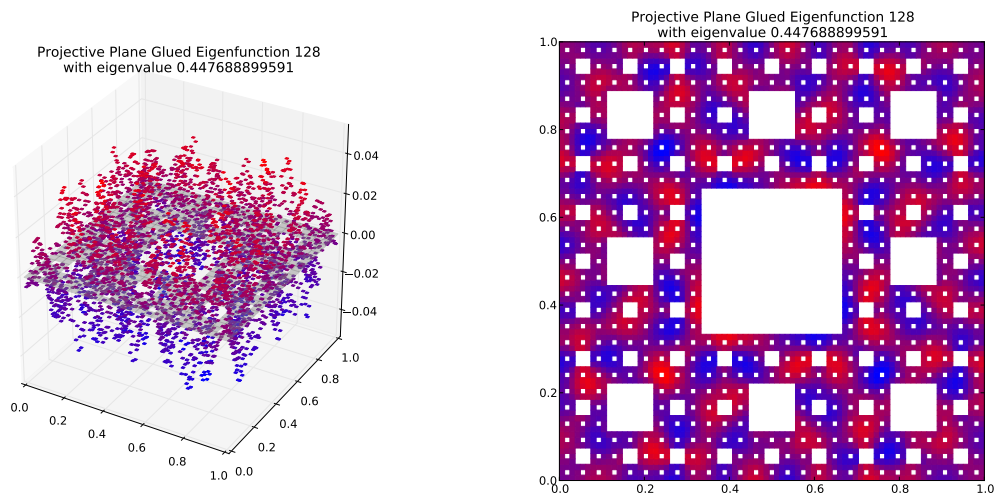
Compare to  $m = 3$  eigenspace with eigenvalue 2.0  
(Note: Eigenspace Dimension  $> 1$ )



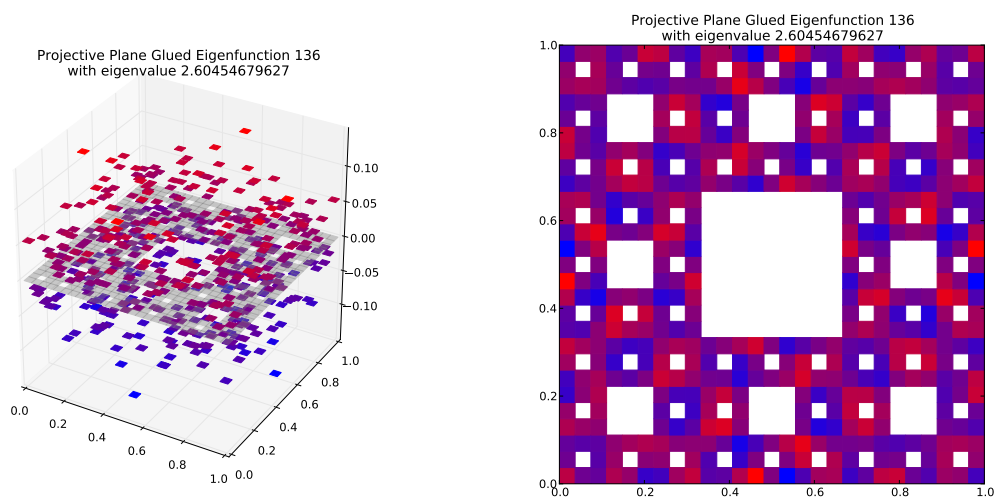
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.220510890483$   
Dot Value: 0.0

## 129 $M = 4$ Eigenfunction 128

$M = 4$  Eigenfunction 128 has eigenvalue 0.447688899591



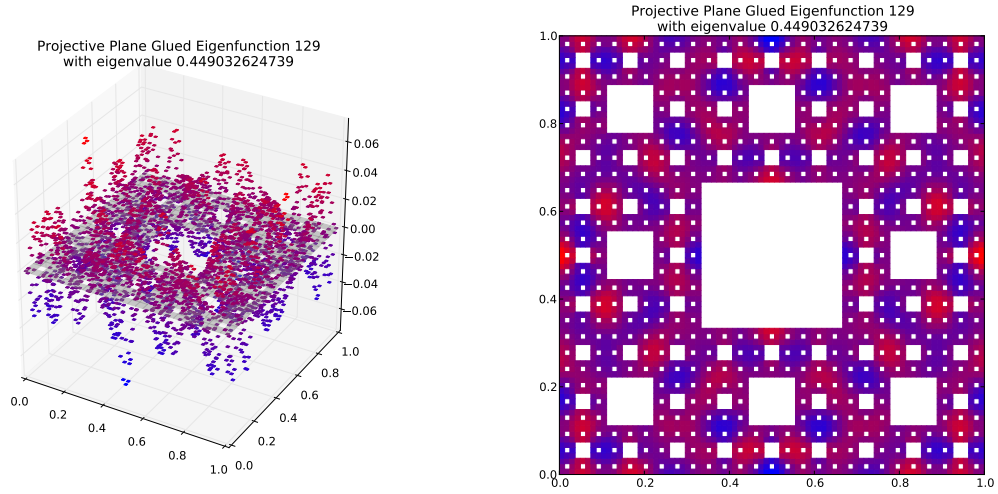
Compare to  $m = 3$  eigenspace with eigenvalue 2.60454679627



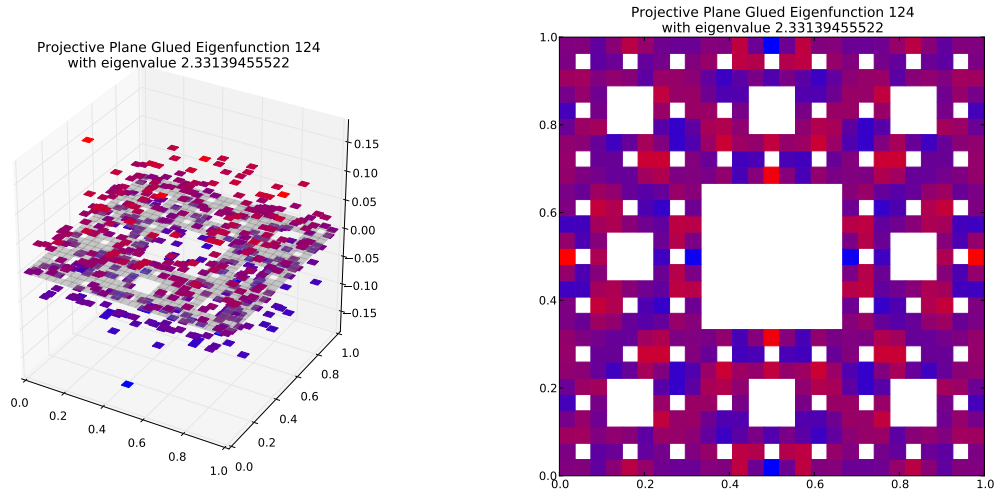
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.171887447072$   
Dot Value: 0.4402100852973181

# 130 $M = 4$ Eigenfunction 129

$M = 4$  Eigenfunction 129 has eigenvalue 0.449032624739



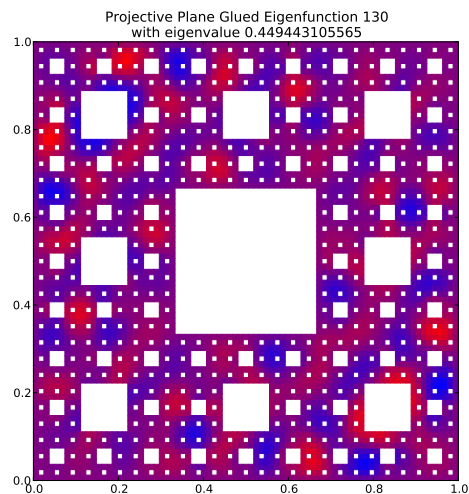
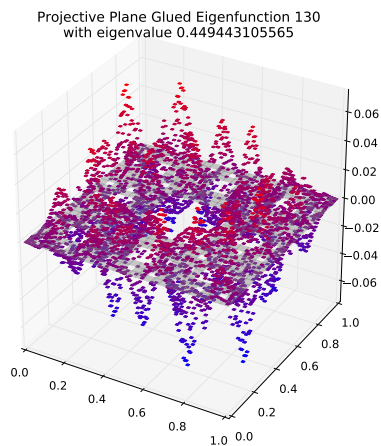
Compare to  $m = 3$  eigenspace with eigenvalue 2.33139455522



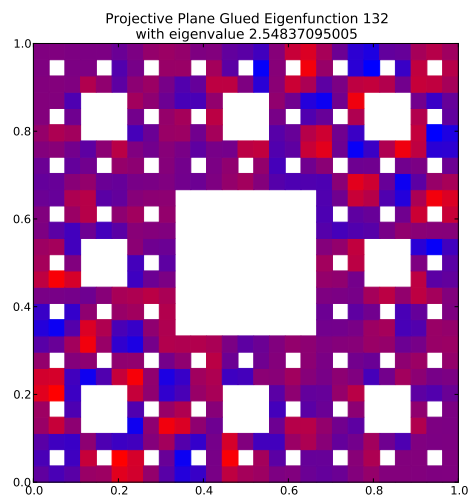
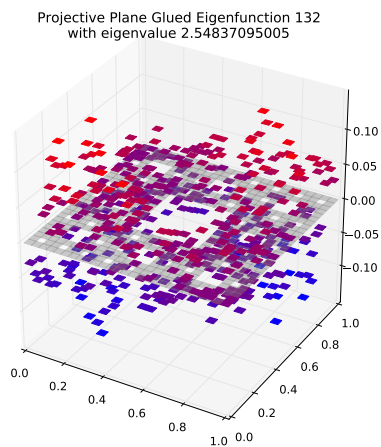
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.192602587895$   
Dot Value: 0.1561313210614338

# 131 $M = 4$ Eigenfunction 130

$M = 4$  Eigenfunction 130 has eigenvalue 0.449443105565



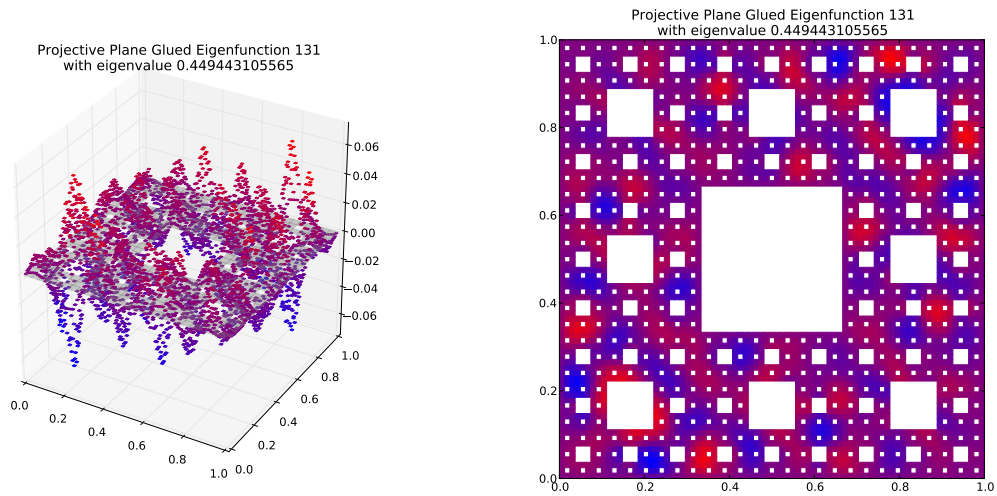
Compare to  $m = 3$  eigenspace with eigenvalue 2.54837095005  
(Note: Eigenspace Dimension  $> 1$ )



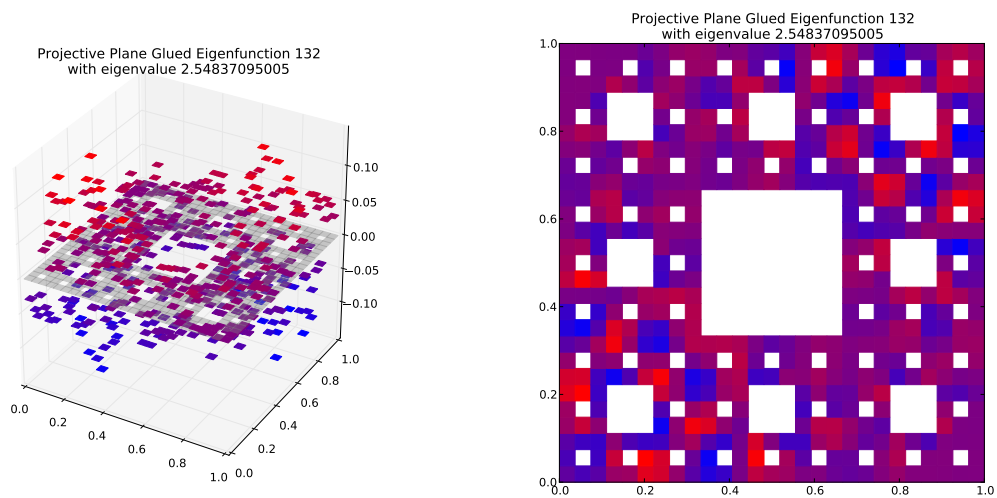
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.176364867743$   
Dot Value: 0.21492581667441135

## 132 $M = 4$ Eigenfunction 131

$M = 4$  Eigenfunction 131 has eigenvalue 0.449443105565



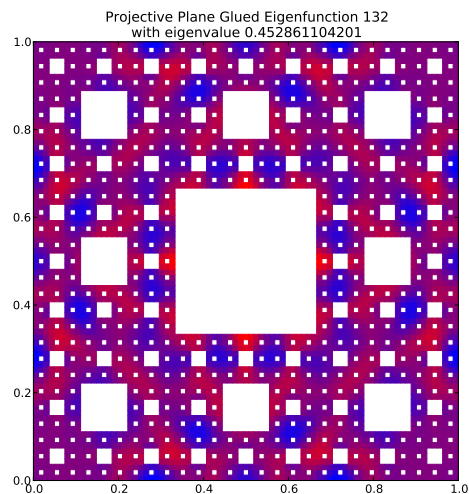
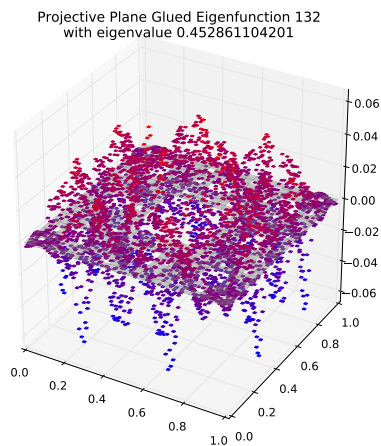
Compare to  $m = 3$  eigenspace with eigenvalue 2.54837095005  
(Note: Eigenspace Dimension  $> 1$ )



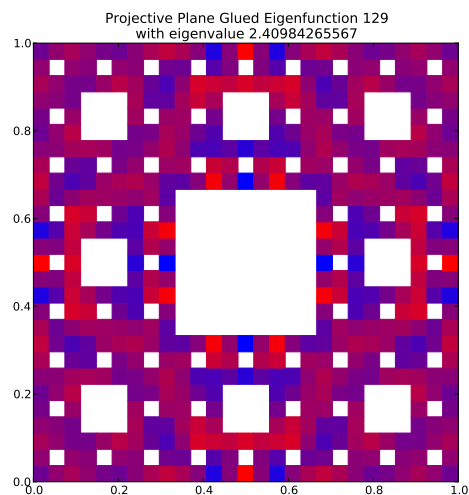
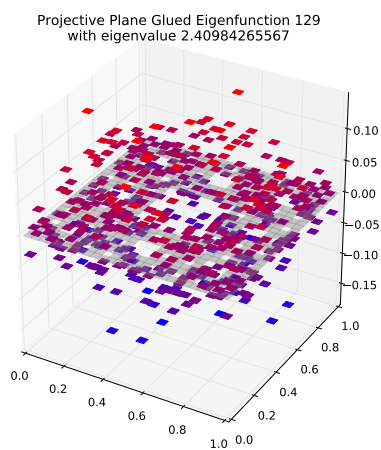
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.176364867743$   
Dot Value: 0.2149258166744159

# 133 $M = 4$ Eigenfunction 132

$M = 4$  Eigenfunction 132 has eigenvalue 0.452861104201



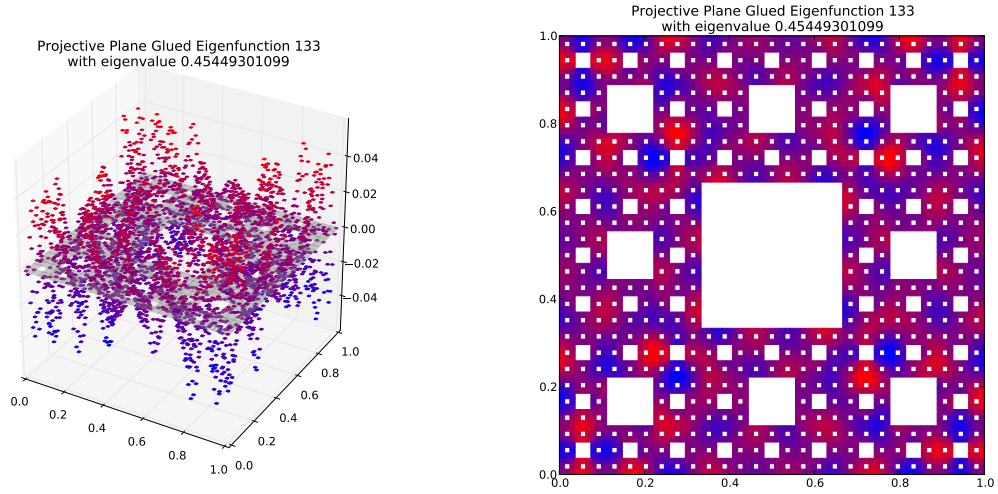
Compare to  $m = 3$  eigenspace with eigenvalue 2.40984265567



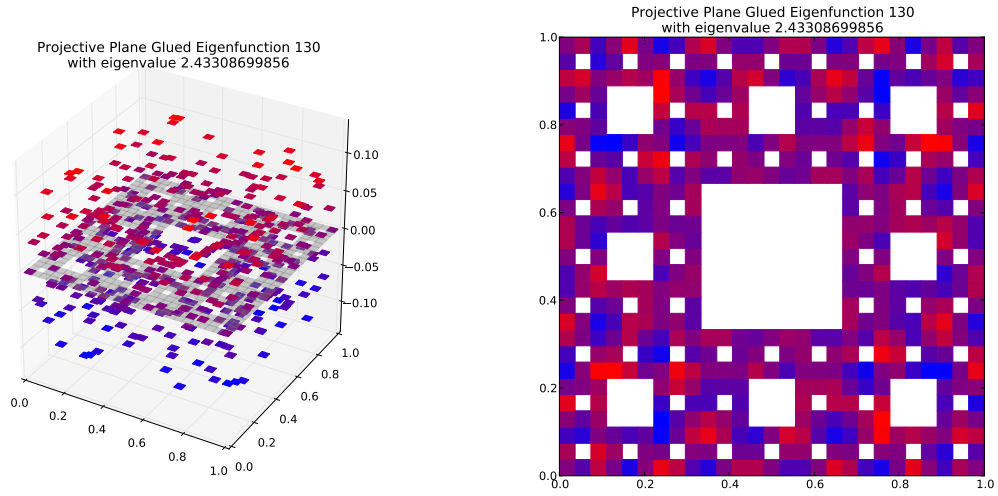
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.187921440902$   
Dot Value: 0.27580196471667295

# 134 $M = 4$ Eigenfunction 133

$M = 4$  Eigenfunction 133 has eigenvalue 0.45449301099



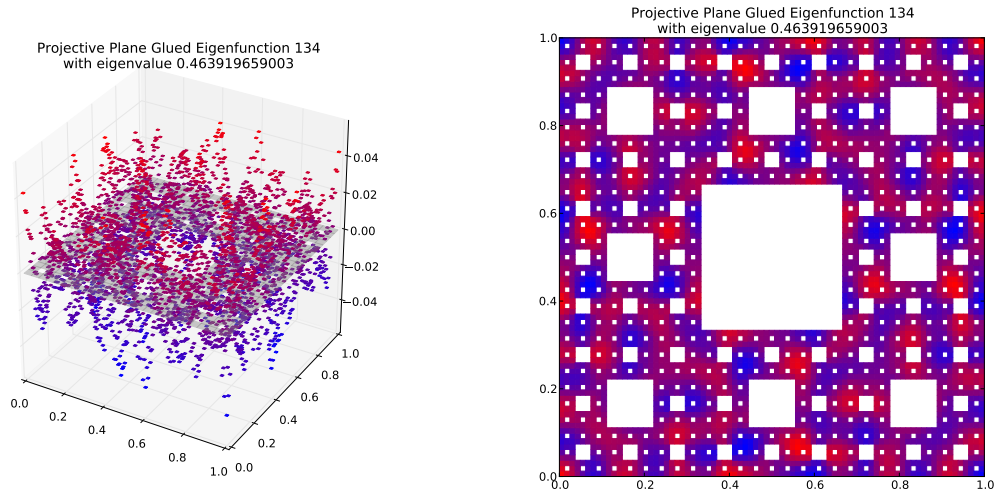
Compare to  $m = 3$  eigenspace with eigenvalue 2.43308699856



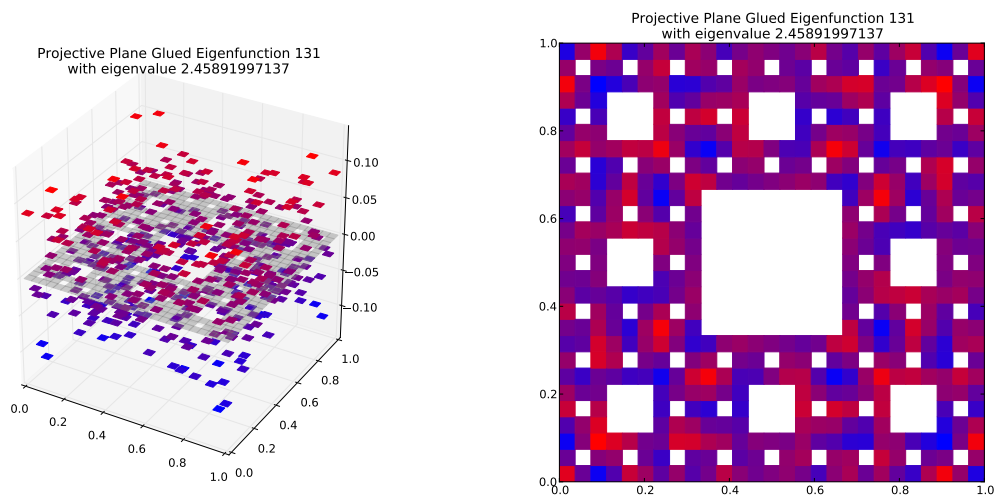
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.186796859816$   
Dot Value: 0.22066196571620522

# 135 $M = 4$ Eigenfunction 134

$M = 4$  Eigenfunction 134 has eigenvalue 0.463919659003



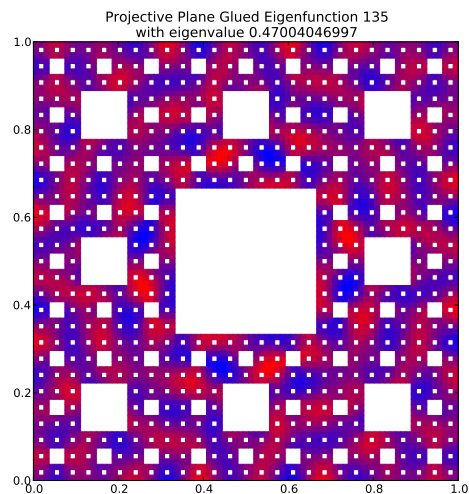
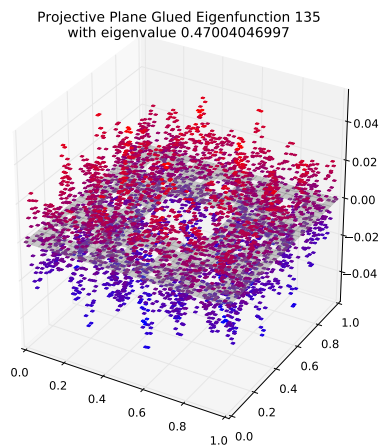
Compare to  $m = 3$  eigenspace with eigenvalue 2.45891997137



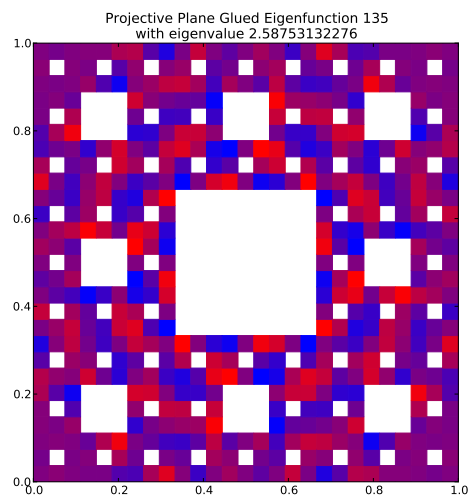
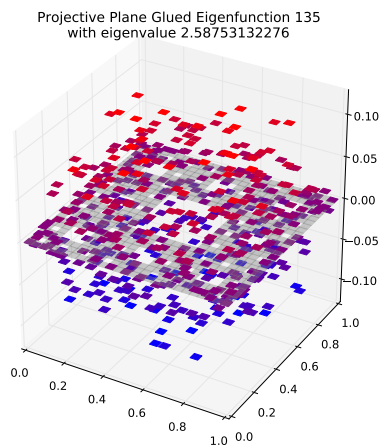
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.188668059312$   
Dot Value: 0.39589125281069404

# 136 $M = 4$ Eigenfunction 135

$M = 4$  Eigenfunction 135 has eigenvalue 0.47004046997



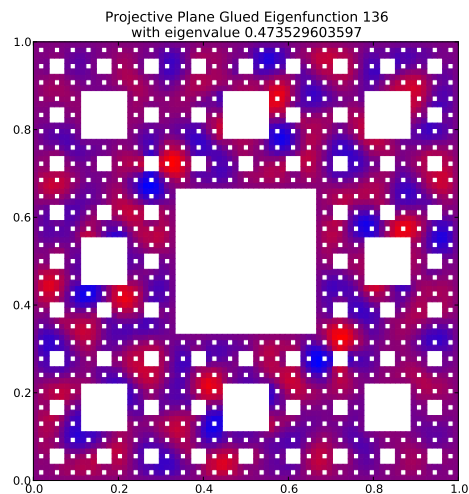
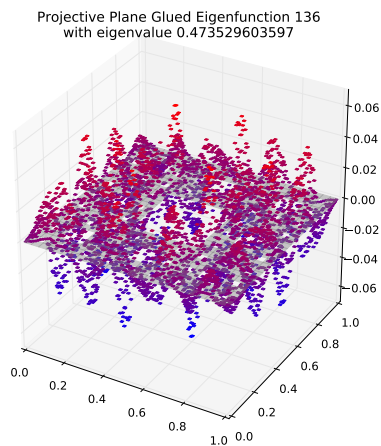
Compare to  $m = 3$  eigenspace with eigenvalue 2.58753132276



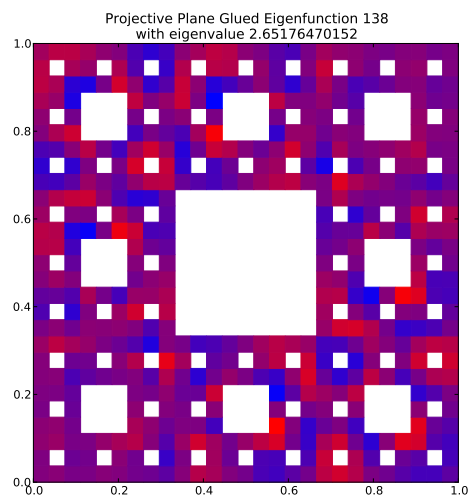
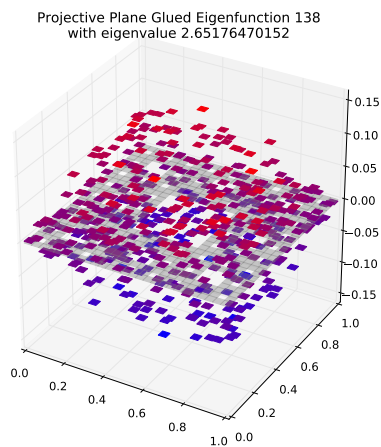
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.181655953625$   
Dot Value: 0.14219539026216244

# 137 $M = 4$ Eigenfunction 136

$M = 4$  Eigenfunction 136 has eigenvalue 0.473529603597



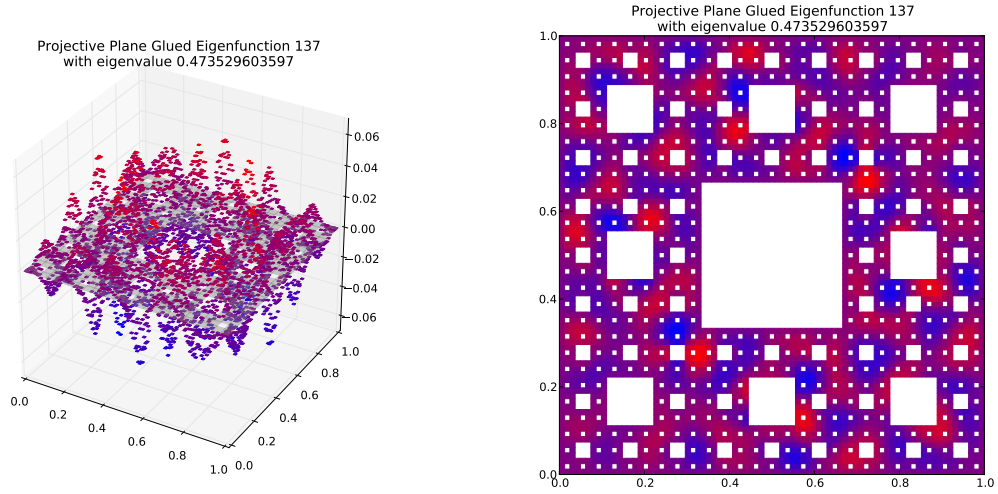
Compare to  $m = 3$  eigenspace with eigenvalue 2.65176470152  
(Note: Eigenspace Dimension  $> 1$ )



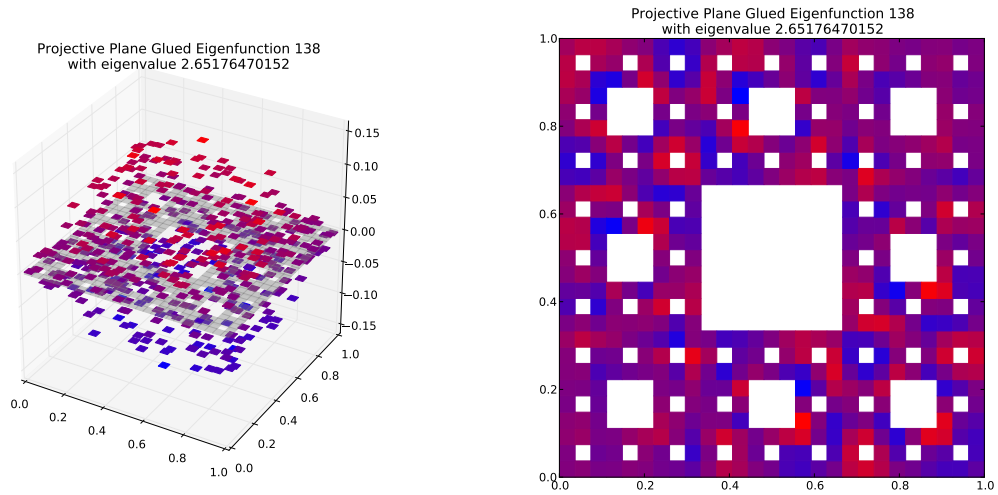
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.178571501207$   
Dot Value: 0.15174204320223317

# 138 $M = 4$ Eigenfunction 137

$M = 4$  Eigenfunction 137 has eigenvalue 0.473529603597



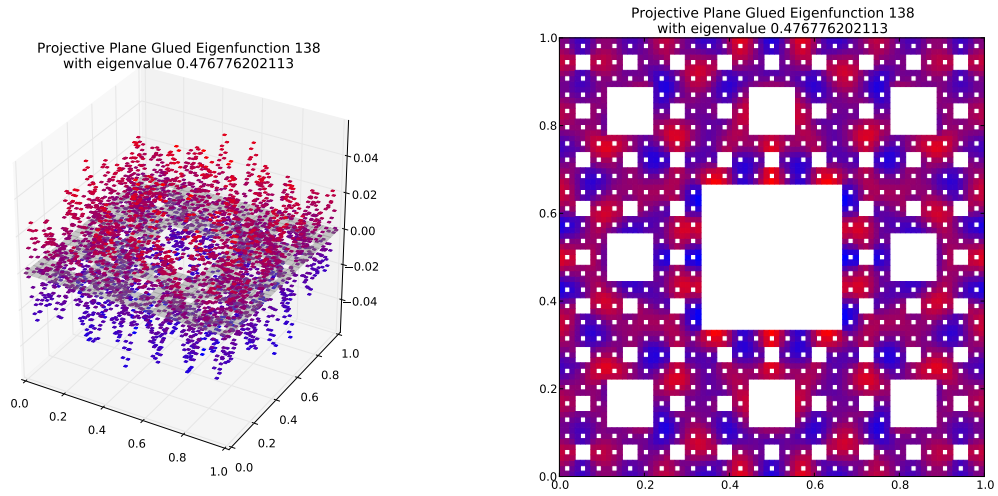
Compare to  $m = 3$  eigenspace with eigenvalue 2.65176470152  
(Note: Eigenspace Dimension  $> 1$ )



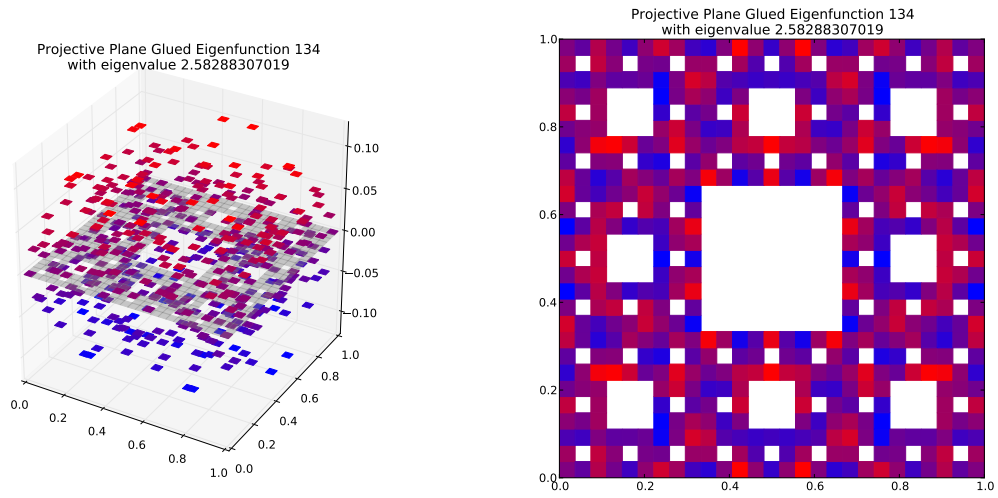
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.178571501207$   
Dot Value: 0.15174204320225526

# 139 $M = 4$ Eigenfunction 138

$M = 4$  Eigenfunction 138 has eigenvalue 0.476776202113



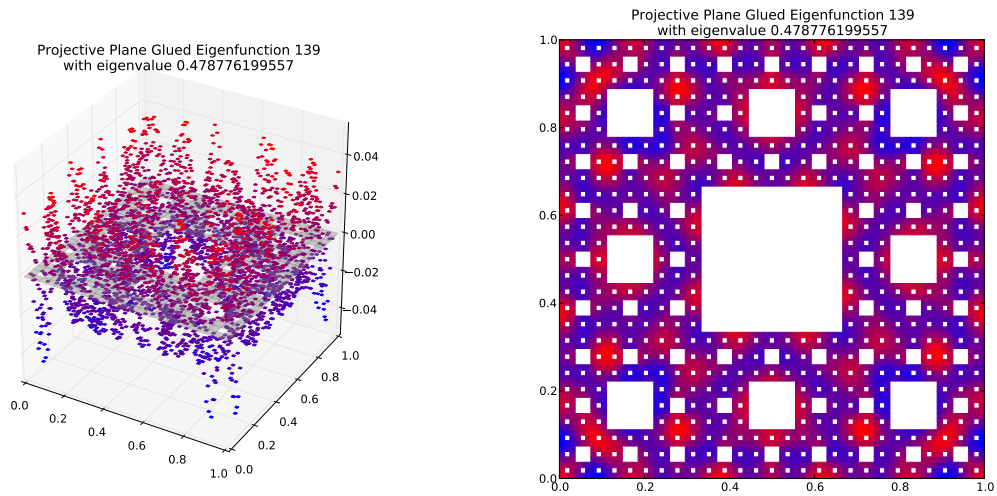
Compare to  $m = 3$  eigenspace with eigenvalue 2.58288307019



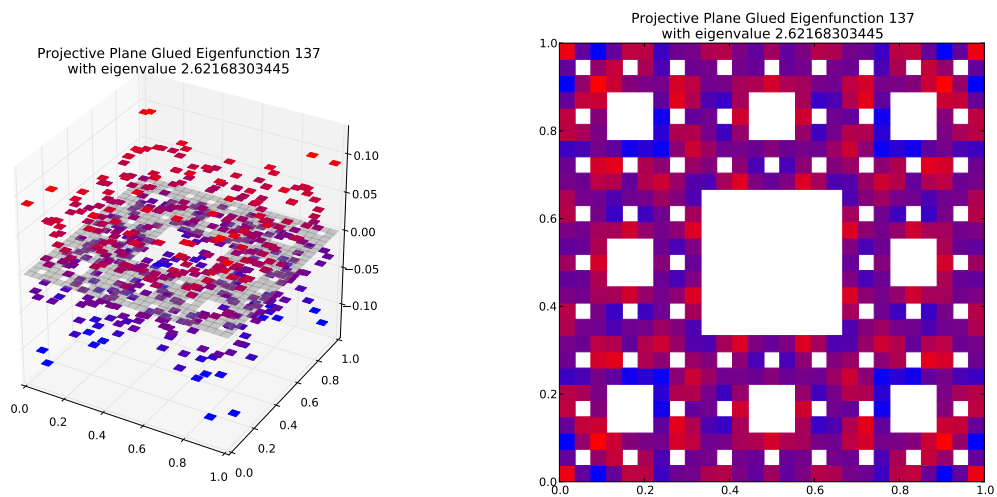
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.184590703162$   
Dot Value: 0.11410547523837111

# 140 $M = 4$ Eigenfunction 139

$M = 4$  Eigenfunction 139 has eigenvalue 0.478776199557



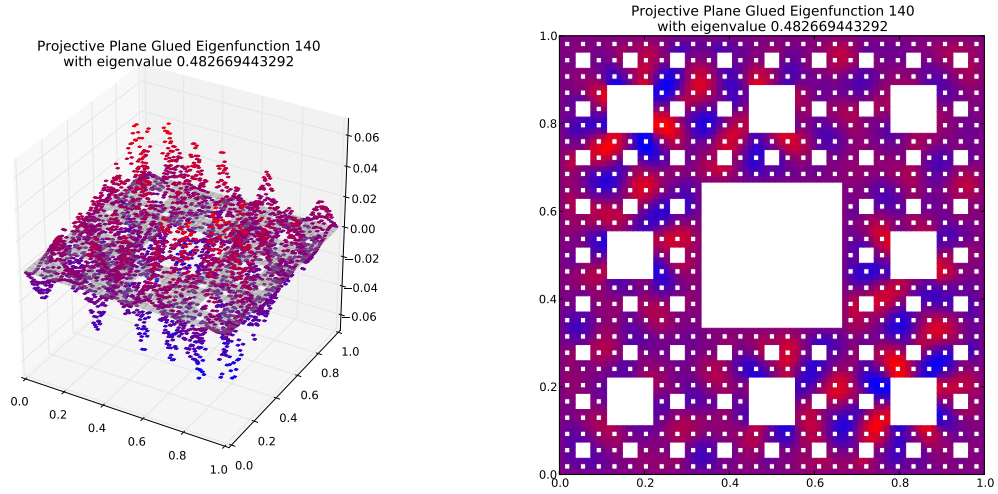
Compare to  $m = 3$  eigenspace with eigenvalue 2.62168303445



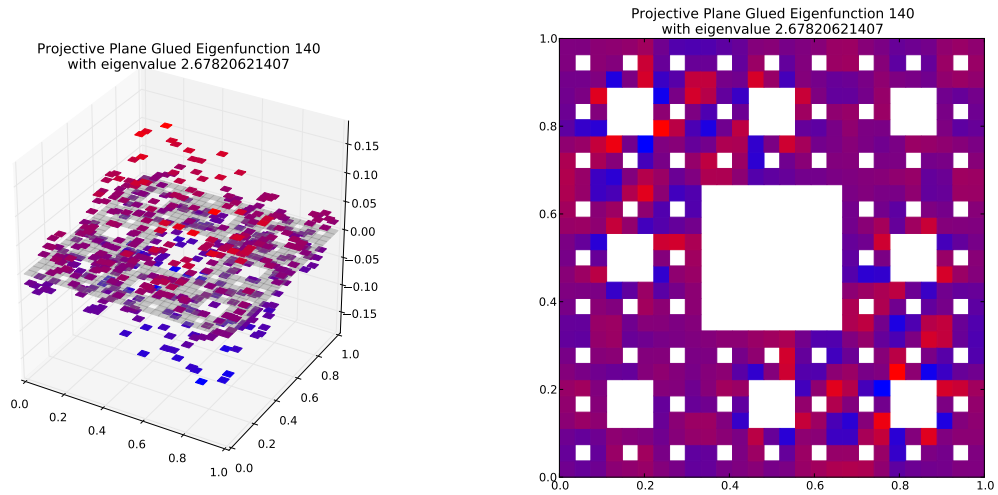
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.18262169502$   
Dot Value: 0.08807315106096669

# 141 $M = 4$ Eigenfunction 140

$M = 4$  Eigenfunction 140 has eigenvalue 0.482669443292



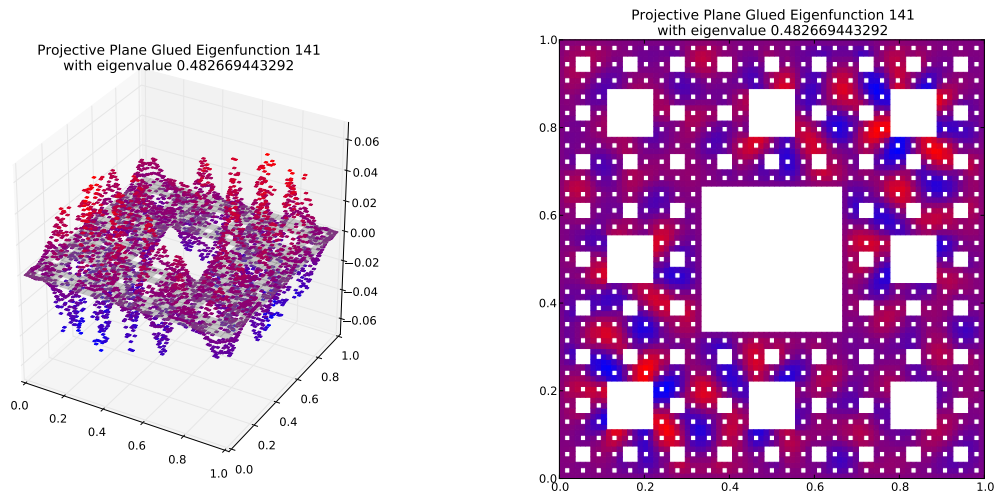
Compare to  $m = 3$  eigenspace with eigenvalue 2.67820621407  
(Note: Eigenspace Dimension  $> 1$ )



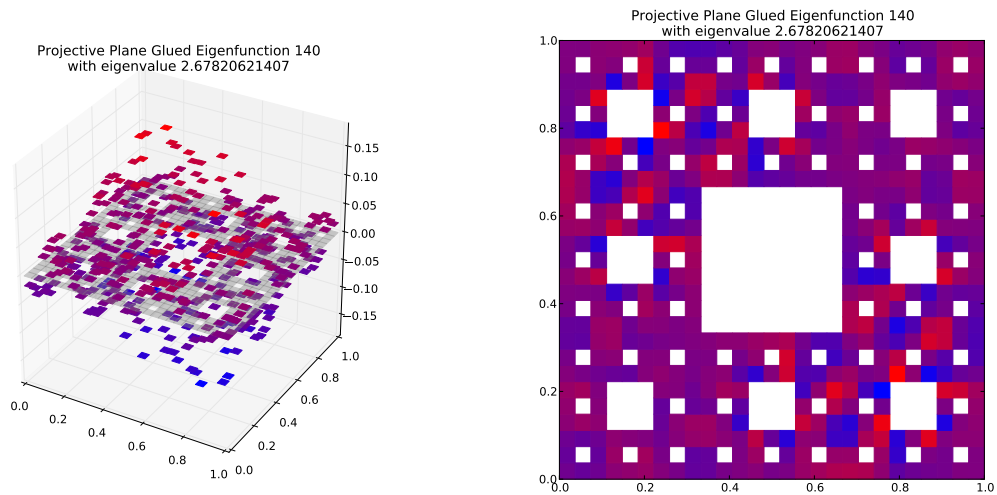
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180221164732$   
Dot Value: 0.09475619724591722

# 142 $M = 4$ Eigenfunction 141

$M = 4$  Eigenfunction 141 has eigenvalue 0.482669443292



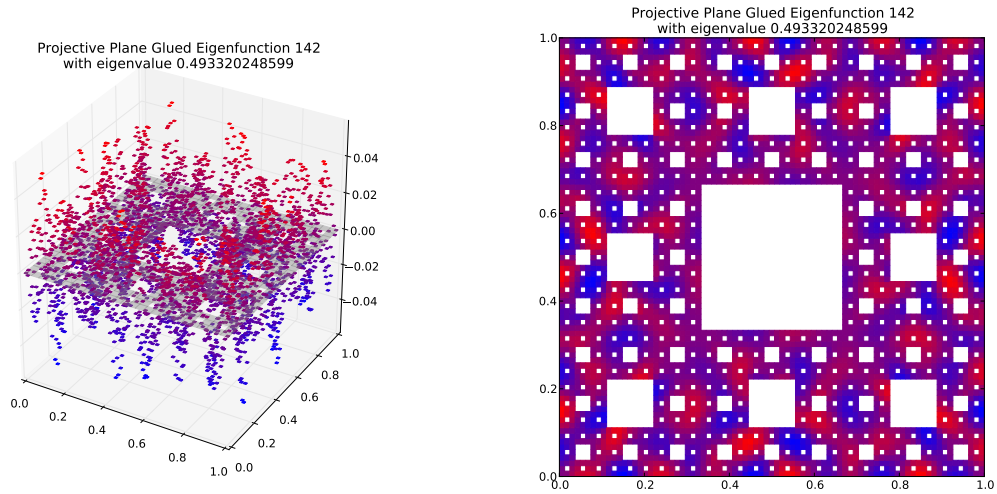
Compare to  $m = 3$  eigenspace with eigenvalue 2.67820621407  
(Note: Eigenspace Dimension  $> 1$ )



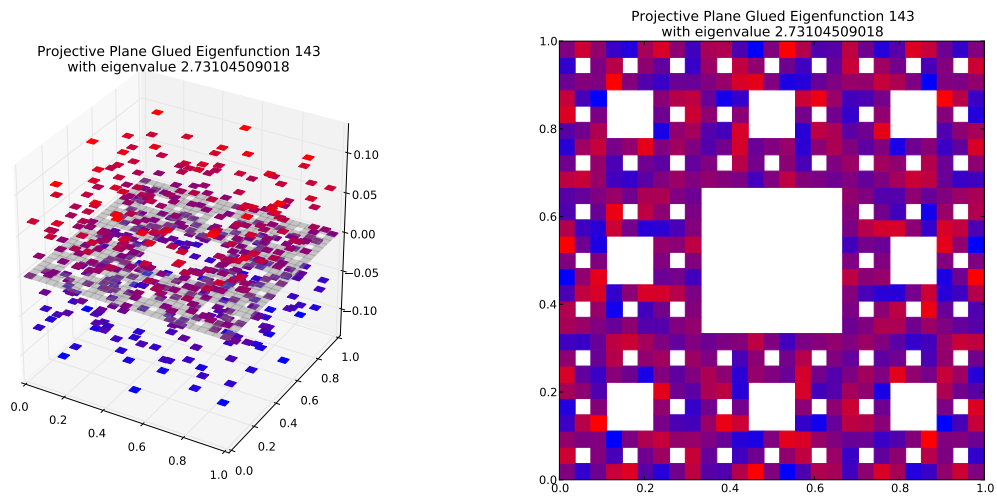
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180221164732$   
Dot Value: 0.09475619724595019

# 143 $M = 4$ Eigenfunction 142

$M = 4$  Eigenfunction 142 has eigenvalue 0.493320248599



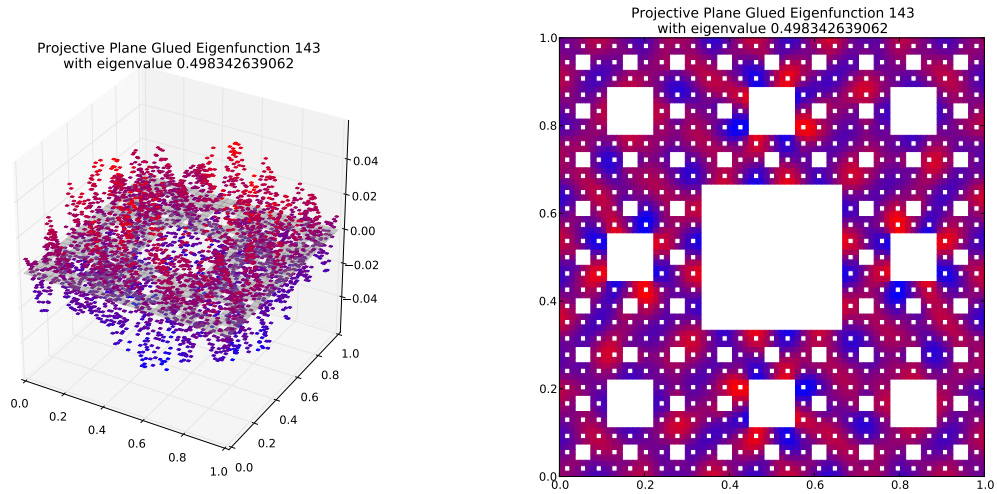
Compare to  $m = 3$  eigenspace with eigenvalue 2.73104509018



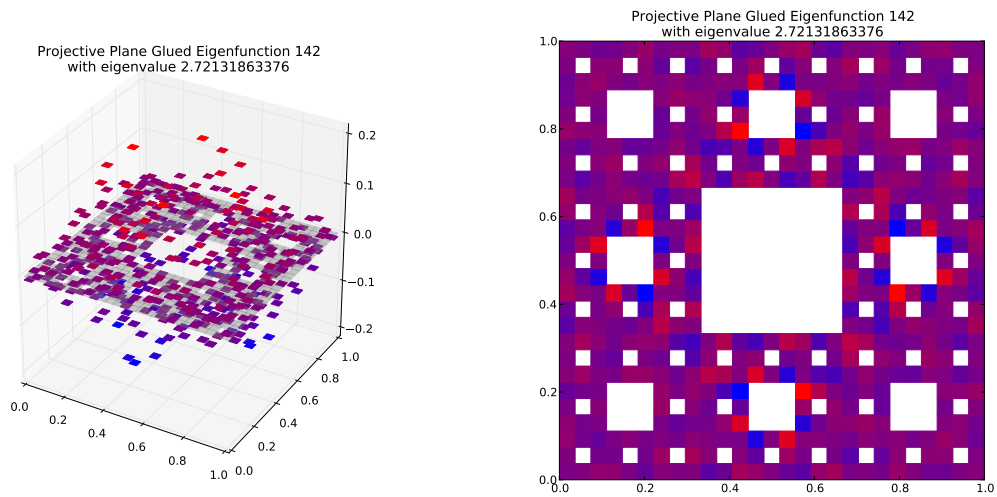
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180634237924$   
Dot Value: 0.05810842785204695

# 144 $M = 4$ Eigenfunction 143

$M = 4$  Eigenfunction 143 has eigenvalue 0.498342639062



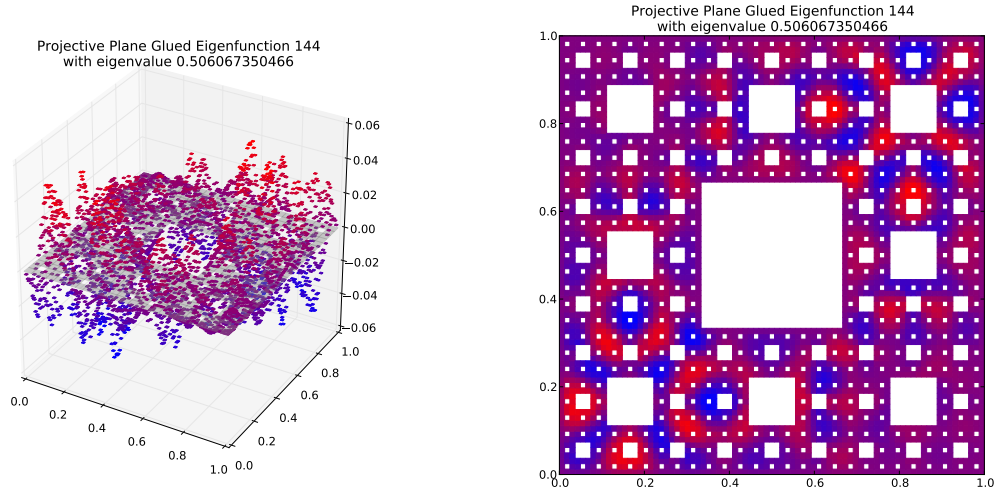
Compare to  $m = 3$  eigenspace with eigenvalue 2.72131863376



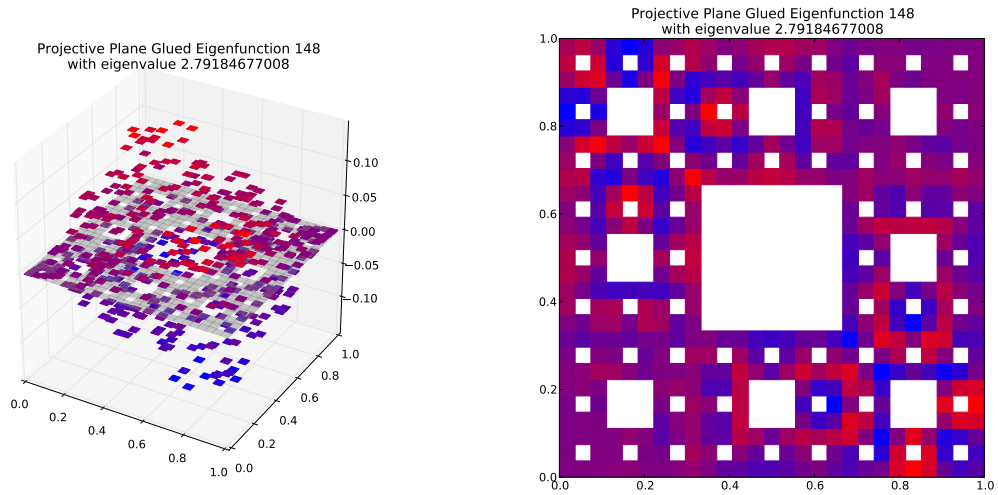
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.183125427827$   
Dot Value: 0.13028971389459232

# 145 $M = 4$ Eigenfunction 144

$M = 4$  Eigenfunction 144 has eigenvalue 0.506067350466



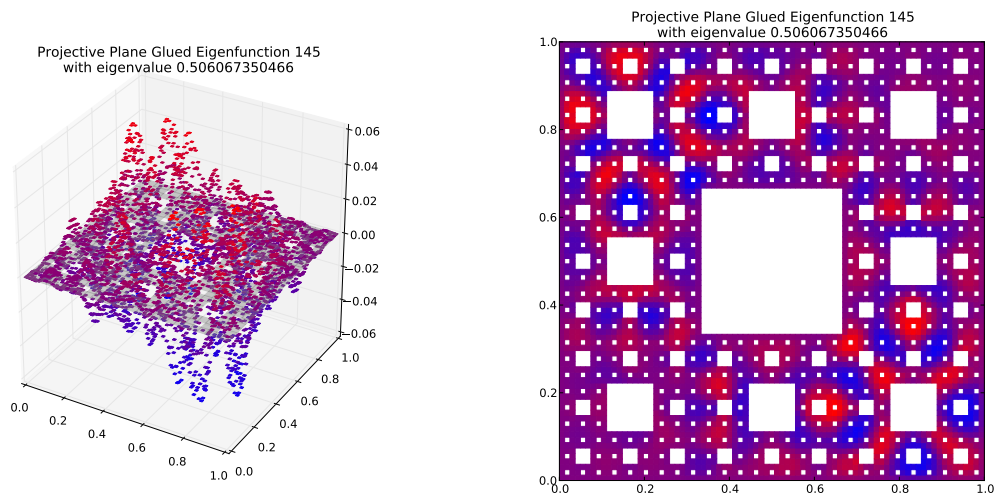
Compare to  $m = 3$  eigenspace with eigenvalue 2.79184677008  
(Note: Eigenspace Dimension  $> 1$ )



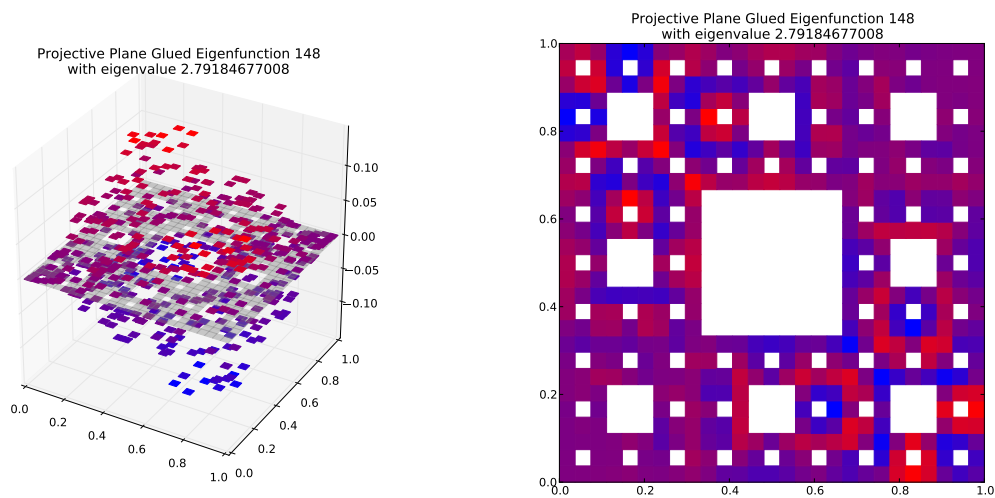
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.181266162559$   
Dot Value: 0.07019552972777265

## 146 $M = 4$ Eigenfunction 145

$M = 4$  Eigenfunction 145 has eigenvalue 0.506067350466



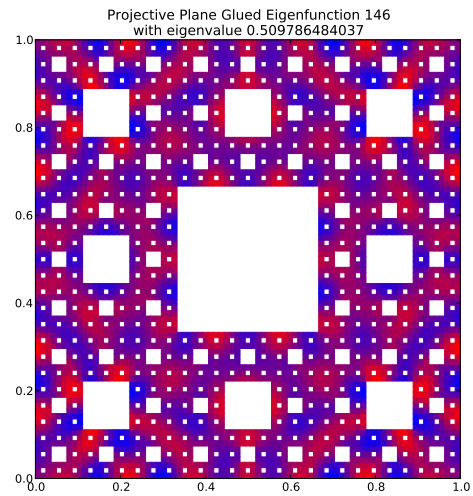
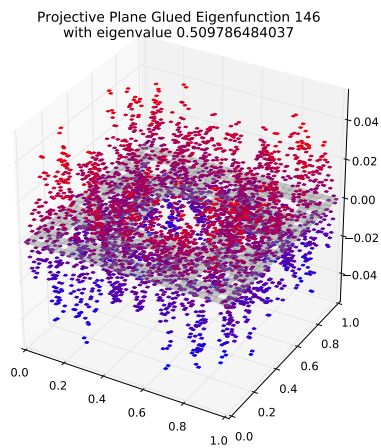
Compare to  $m = 3$  eigenspace with eigenvalue 2.79184677008  
(Note: Eigenspace Dimension  $> 1$ )



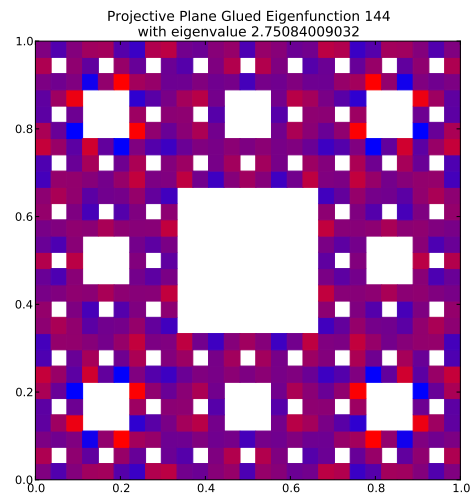
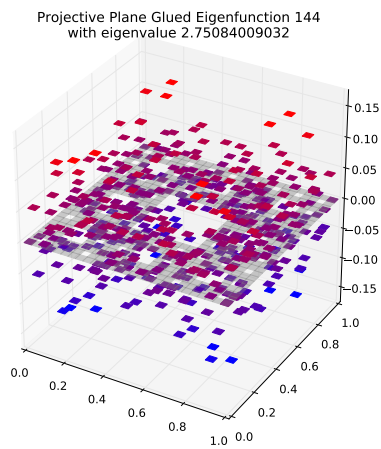
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.181266162559$   
Dot Value: 0.07019552972777643

# 147 $M = 4$ Eigenfunction 146

$M = 4$  Eigenfunction 146 has eigenvalue 0.509786484037



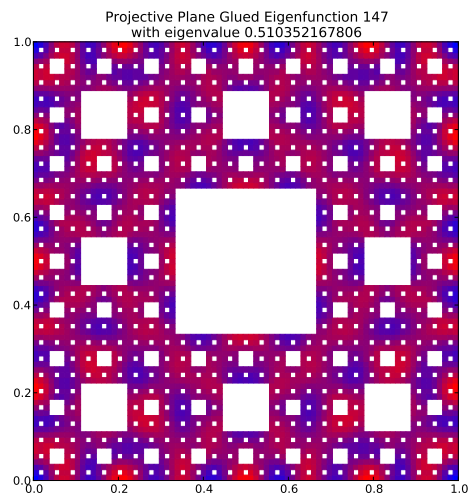
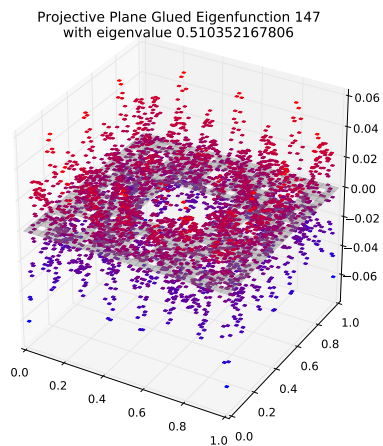
Compare to  $m = 3$  eigenspace with eigenvalue 2.75084009032



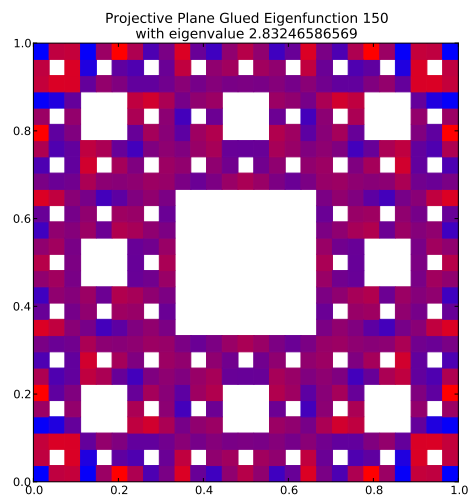
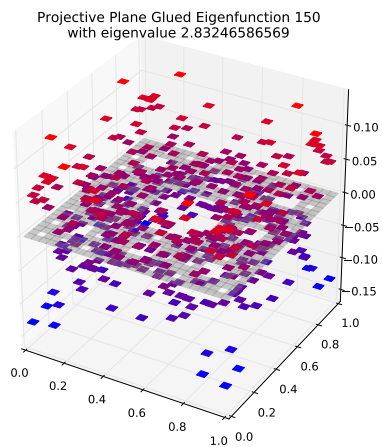
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185320290274$   
Dot Value: 0.0966420396697728

# 148 $M = 4$ Eigenfunction 147

$M = 4$  Eigenfunction 147 has eigenvalue 0.510352167806



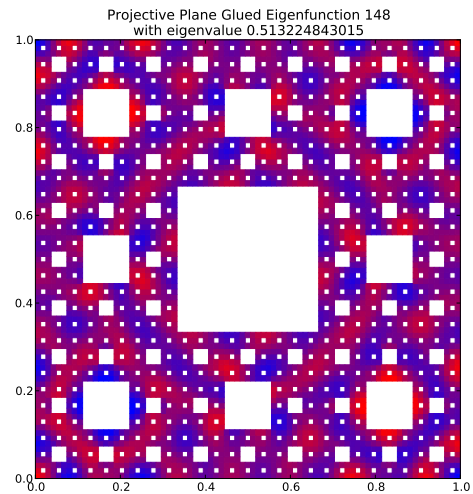
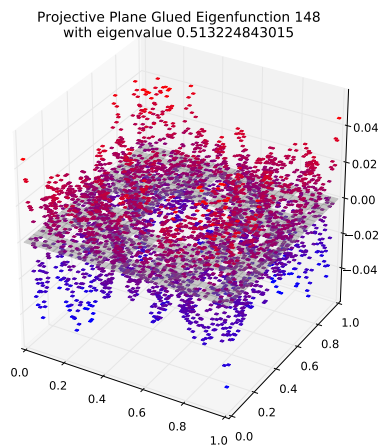
Compare to  $m = 3$  eigenspace with eigenvalue 2.83246586569



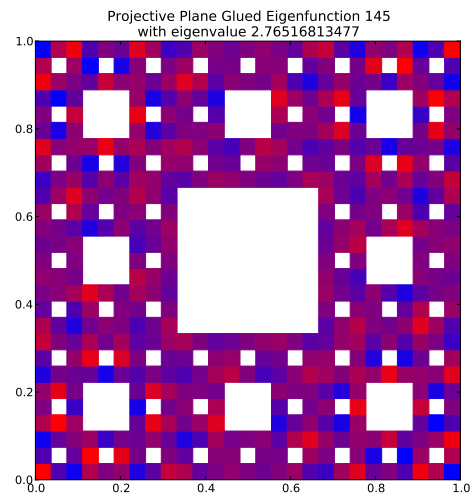
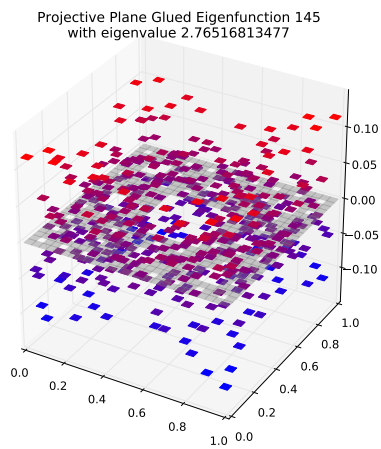
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.180179459173$   
Dot Value: 0.1273171879241375

# 149 $M = 4$ Eigenfunction 148

$M = 4$  Eigenfunction 148 has eigenvalue 0.513224843015



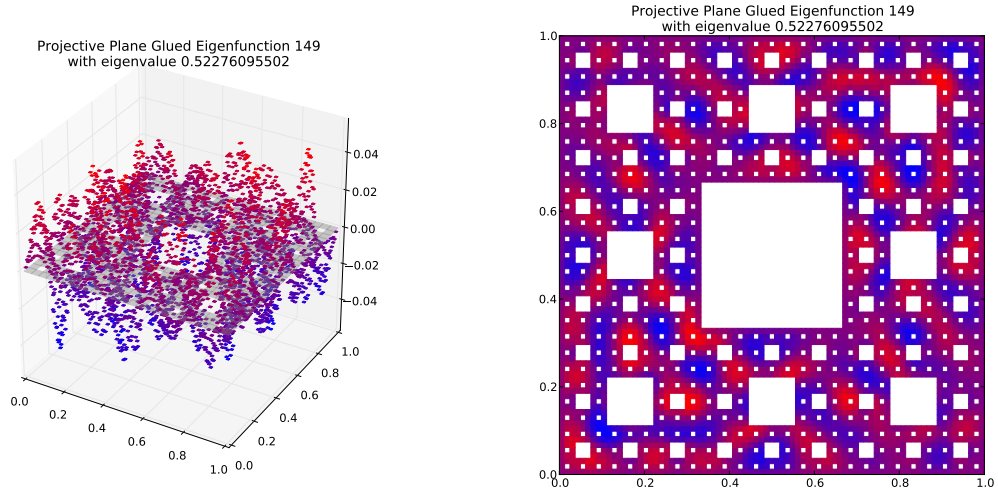
Compare to  $m = 3$  eigenspace with eigenvalue 2.76516813477



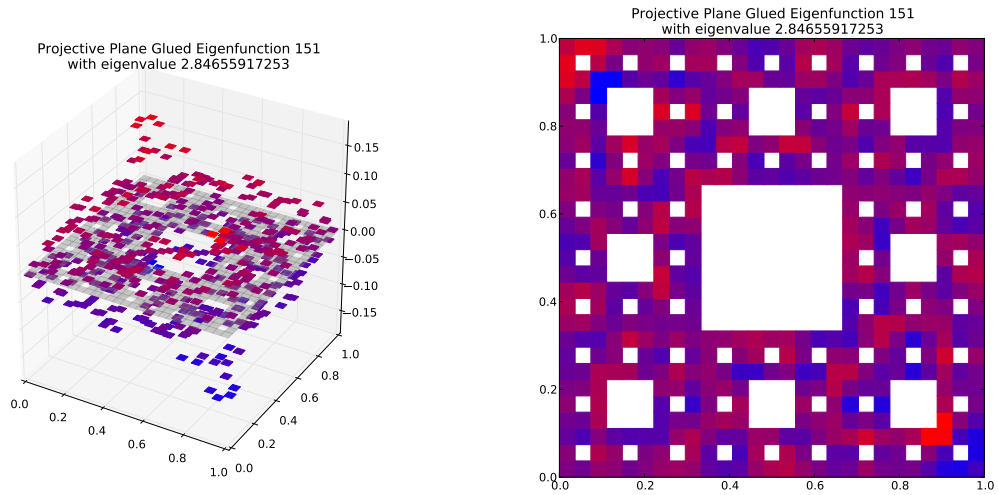
Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.185603485214$   
Dot Value: 0.13373760844051896

# 150 $M = 4$ Eigenfunction 149

$M = 4$  Eigenfunction 149 has eigenvalue 0.52276095502



Compare to  $m = 3$  eigenspace with eigenvalue 2.84655917253  
(Note: Eigenspace Dimension  $> 1$ )



Eigenvalue Ratio:  $\lambda_4/\lambda_3 = 0.183646614504$   
Dot Value: 0.13155288832105938