

The Oliver Club

www.math.cornell.edu/~oliver/

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The Geometry of Noncommutative Rings

In geometry, people often try to understand spaces in terms of the functions defined on them. For example, the Gel'fand-Naimark Theorem implies that a compact Hausdorff space may be recovered from the C^ algebra of continuous functions on it. In a sense, every commutative ring can be viewed as a ring of functions on a space called an affine scheme. In many applications, noncommutative rings also appear (for example, as rings of differential operators). It is therefore natural to ask whether a noncommutative ring can also be viewed as a ring of functions on some space. I will explain one way to do this explicitly, then explain some limitations of constructions of this type and describe ways in which people have successfully circumvented them in certain cases, for example the noncommutative projective geometry of M. Artin, J. Zhang, et al.*



Thursday, October 1, 2009
at 4:25 PM in 406 Malott Hall

Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).