Geometria non commutativa ad aritmetica infinita

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I will describe a noncommutative space underlying the geometry of the archimedean fibers of an arithmetic surface over a number field. I will also discuss how the geometry of these archimedean fibers is related to the AdS/CFT correspondence for the Euclidean BTZ black hole and some higher genus generalizations. The results are based on joint work with Caterina Consani and with Yuri Manin.