

Noncommutative geometry and motives

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Abstract

In the recent years noncommutative geometry, number-theory and the theory of motives have come to an interesting cross-point. NCG gives through the noncommutative space of adèle classes a set-up in which Weil explicit formulas acquire a geometric meaning.

In the talk I will describe a cohomological interpretation of the spectral realization of the zeroes of the zeta-function as the cyclic homology of a “suitable” non-commutative space. A central role in this construction is played by few ideas that naturally lead to the definition of a theory of noncommutative motives.

Joint work with A. Connes and M. Marcolli.