

James Arthur

Automorphic representations and motives.

Abstract : Motives represent hidden building blocks for both number theory and geometry. Automorphic representations are spectral objects with the analytic power to resolve some of the deepest questions in modern harmonic analysis. It has long been thought that there were fundamental relations between these very different sides of mathematics. We shall describe conjectures on the explicit nature of some of these relations, as expressed in terms of the automorphic and motivic Galois groups. If time permits, we shall comment on how these universal groups might extend to the broader theories of mixed motives and exponential motives.