Speaker: Peter Humphries

Title: Spectral reciprocity and applications

Abstract: Spectral reciprocity is a phenomenon in which certain moments of L-functions are shown to be exactly equal to other moments of L-functions. A quintessential example is Motohashi's formula, which relates the fourth moment of the Riemann zeta function to the third moment of L-functions associated to GL(2) automorphic forms. I will discuss generalisations of Motohashi's formula, how to prove these formulae using tools from the theory of automorphic forms, and applications of these formulae to problems in analytic number theory, including the L^4-norm problem for automorphic forms.