

Speaker: Kevin Kwan

Title: Moments and Periods for $GL(3)$

Abstract: Moments of L-functions have been important in number theory and are well-motivated by a variety of arithmetic applications. In this talk, we will begin with two elementary counting problems of Diophantine nature, followed by a survey of techniques in the past and the present. The main goal is to demonstrate how period integrals (after Jacquet-Piatetski-Shapiro-Shalika, Reznikov, and Michel-Venkatesh) can be used to study moments of automorphic L-functions and uncover the interesting underlying structures, some of which can be modeled by the theory of multiple Dirichlet series and the random matrix theory. If time permits, we will discuss some ongoing works and generalizations.