

SPEAKER: David Rohrlich

RTG TALK TITLE: Self-dual Artin representations

ABSTRACT: In a recent paper (Bulletin of the AMS 44 (2007)), Bektemirov, Mazur, Stein and Watkins survey the evidence pertaining to a "minimalist conjecture" for the order of vanishing at $s=1$ of the L-function of an elliptic curve over the rationals. The content of such a conjecture is that with probability 1, the order of vanishing is the minimum compatible with the functional equation. If one attempts to formulate an analogous hypothesis for more general motivic L-functions then one is led to a second issue, significant in its own right: Do "essentially self-dual" motives have density 0 among all motives? If one restricts one's attention to Artin representations then this question has a precise formulation, and for most number fields even the case of one-dimensional Artin representations – in other words, ray class characters – seems to present a formidable challenge.