

SPEAKER: Luis Lomeli (University of Oklahoma)

TITLE: The LS method and the Ramanujan Conjecture over function fields

ABSTRACT: We give a presentation of the Langlands-Shahidi method over a global function field for the classical groups. We provide a system of extended L -functions $L(s, \pi \times \tau)$, and related local factors, where π and τ are globally generic cuspidal automorphic representations of a classical group or a general linear group. Our results are currently complete under the assumption that the characteristic is different than two. Applications to Langlands functoriality are possible thanks to the Converse Theorem of Cogdell and Piatetski-Shapiro. We obtain a functorial lift for globally generic cuspidal representations of classical groups to an appropriate GL_N . This is precisely the relevant case for the Generalized Ramanujan Conjecture, which states that globally generic cuspidal automorphic representations are tempered at every local place. Thanks to the work of Lafforgue on the Langlands correspondence for GL_N over function fields, we are able to prove this conjecture for the classical groups.