SPEAKER: Luis Lomeli (University of Oklahoma)

TITLE: On Automorphic L-functions in positive characteristic

ABSTRACT: Automorphic Asai, exterior square, and symmetric square L-functions are defined in positive characteristic. This is done by developing the Langlands-Shahidi method over global function fields. In addition, we include L-functions for Rankin-Selberg products of GL_m and GL_n. Joint work with G. Henniart gives a characterization of local factors that enables us to prove these L-functions are the correct ones, in accordance with the local and global Langlands conjectures available in non-zero characteristic. There are interesting applications to the representation theory of $\mathfrak{p}$-adic reductive groups. Let π be a smooth irreducible supercuspidal unitary representation of the Siegel Levi subgroup GL_n of an appropriate classical group over a local non-archimedean field of characteristic p. We obtain a criterion to determine the reducibility of the representation obtained by unitary parabolic induction from $\pi \otimes |\det(\cdot)|^s$, $s \in \mathbb{C}$, in terms of L-functions.