SPEAKER: Solomon Friedberg

TITLE: Metaplectic Whittaker functions and crystal graphs

ABSTRACT: I shall describe the Whittaker coefficients of Borel Eisenstein series on the metaplectic n-fold cover of the general linear group. In the situation under study, because of the cover the Whittaker model is not even locally unique and the global Whittaker coefficients are not Eulerian. Nonetheless, their study may be reduced to local integrals, and these integrals may be evaluated as sums of products of Gauss sums, which are described using the crystal graphs that arise in representations of quantum groups. This result may be regarded as one generalization of the Casselman-Shalika formula to the metaplectic group. If time permits, I will also explain how one can realize these functions as the values of partition functions in the sense of statistical mechanics, arising from new six-vertex lattice models in which the Boltzmann weights are number-theoretic. This work is joint with Benjamin Brubaker and Daniel Bump.