Speaker: Rahul Dalal

Title: Bounding Orbital Integrals through the Metric Geometry of Bruhat-Tits buildings

Abstract: Kottwitz in his thesis described how to interpret orbital integrals of unramified Hecke algebra elements on p-adic groups in terms of certain point counts on the Bruhat-Tits building. We describe how the metric geometry of buildings can be be used to estimate these counts and explicitly bound the growth of orbital integrals of indicator functions of larger and larger double cosets of a hyperspecial subgroup. We also speculate on what this method suggests the optimal growth bound should be. Such bounds naturally come up when using the trace formula to estimate high "moments" of Satake parameters at some local place over a family of automorphic representations---in other words, in taking averages of higher and higher degree polynomial functions on the space of possible parameters.