October 29, 2014: Cheng-Chiang Tsai (Harvard), *Local character expansions of supercuspidal representations.*

Let G be a reductive p-adic group and π an irreducible admissible representation. Harish-Chandra showed that the character of π has an expansion as a finite linear combination of Fourier transforms of nilpotent orbital integrals near the identity. I will demonstrate, through example, an algorithm to compute the coefficients of the expansion for certain compactly induced (in particular supercuspidal) representations. The result is expressed in terms of number of rational points on specific varieties over the residue field. For our example we'll see the number of rational points on certain cover of a hyperelliptic curve.