Title: On the Fourier coefficients of automorphic forms

Abstract: The Fourier coefficients of modular forms and in general automorphic forms have many number theoretic properties. Ramanujan in 1916 proved that $\tau(n) \equiv \sigma_{11}(n) \pmod{691}$ for all integer $n \geq 1$, where $\sigma_{11}(n) = \sum_{d|n} d^{11}$. This can be viewed as a coefficient-wise congruence between the unique cusp form $\Delta(z) = \sum_{n\geq 1} \tau(n) e^{2\pi i n z}$ of weight 12 and the non-cusp form $E_{12}(z) = -\frac{B_{12}}{24} + \sum_{n\geq 1} \sigma_{11}(n) e^{2\pi i n z}$ of weight 12, here B_{12} is the 12th Bernoulli number. In the first part of talk we shall discuss the existence of similar congruences in the space of modular forms of prime level. In the second part of my talk we shall discuss the distribution of signs of the Fourier coefficients of Hermitian modular forms. Hermitian modular form is a generalization of the theory of modular forms to several variables.