

Speaker: Peter Sarnak

Title: Nodal sets of Maass forms and of random real projective hypersurfaces

Abstract: In the first half we discuss various Gaussian ensembles for real homogeneous polynomials in several variables and the question of the distribution of the topologies of the connected components of the zero sets of a typical such random real hypersurface. For the "real -Fubini -Study ensemble" and at other end the "monochromatic wave ensemble", one can show that these have universal laws. Some qualitative features of these laws are also established. The monochromatic ensemble is expected to model the nodal lines of Hecke Maass forms and in the second half we discuss what can be proved towards this expectation . (joint works with I.Wigman and A.Ghosh /A.Reznikov) .