Philadelphia Area Number Theory Seminar

Michael Magee
Institute for Advanced Study

Zero sets of Hecke polynomials on the sphere

Abstract: The eigenspaces of the Laplacian on the two dimensional sphere consist of homogeneous polynomials and occur with increasing dimension as the eigenvalue grows. I'll explain how one can remove this high multiplicity by using arithmetic Hecke operators that arise from the Hamilton quaternions. The resulting Hecke eigenfunctions are subject to predictions arising from random function theory and quantum chaos, in particular concerning the topology of their zero sets. I'll discuss what is known in this area and how one can try to study these \nodal lines".

Wednesday, January 28, 2015
2:40{4:00PM

Bryn Mawr College
Department of Mathematics
Park Science Center 328

Tea and refreshments at 2:20PM in Park 355