

Seminar on Complex Analysis
Meeting 2043, 9th September 2011
lecture: **Nodal sets of eigenfunctions and complex geometry**
author: Steve Zelditch

A long standing problem on eigenfunctions of the Laplacian on Riemannian manifolds is to measure the hypersurface volume of nodal (equal to zero) sets of eigenfunctions and find out how they are distributed as the eigenvalue tends to infinity. This problem seems hopeless for general smooth metrics, but it turns out to be tractable for real analytic methods. The idea is to analytically continue eigenfunctions into the complexification of the manifold and to use pluri-potential theory. The dynamics of the geodesic flow also plays an important role.