



Speaker: David Treumann
Northwestern University - Evanston, IL

Thursday, January 26, 2012
4:30 PM
117 Hayes-Healy Hall

Title: Mirror symmetry and constructible sheaves

Abstract:

I will give an introduction to the "microlocal" theory of constructible sheaves in the sense of Kashiwara and Schapira, and discuss some recent applications of this theory to Kontsevich's homological mirror symmetry (HMS) conjectures. HMS seeks to relate symplectic geometric objects (such as Lagrangian submanifolds) attached to a symplectic manifold X to complex geometric objects (such as holomorphic vector bundles) attached to a complex manifold Y . The symplectic objects can be described in microlocal terms when X is a cotangent bundle; the cotangent bundle of a compact torus is especially relevant for mirror symmetry. I will discuss the "coherent-constructible correspondence" which matches these objects to coherent sheaves on toric varieties, and an extension of this correspondence to hypersurfaces.