

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

Denis Auroux

Harvard University

Thursday, February 20, 2:50-3:50 pm, Lake Hall 511

**Coisotropic branes and homological mirror symmetry
for tori**

Abstract

This talk will focus on homological mirror symmetry for tori, and some of its unexpected features for abelian varieties with complex multiplication. After reviewing mirror symmetry for elliptic curves and the challenges posed by complex multiplication, I will describe an approach, developed in the PhD thesis of my student Yingdi Qin, to the problem of incorporating coisotropic branes into the Fukaya category of a torus; as well as the motivation for this construction from the perspective of SYZ and homological mirror symmetry. Qin's work also gives an insight into the equivalence between the Fukaya categories of dual symplectic tori (eg elliptic curves with inverse areas), which I will explain if time permits.