Topology Seminar

Hiro Tanaka

of Harvard University will be speaking on

Lagrangian Cobordisms and Fukaya category

on March 14 at 4:30 in
MIT Room 2-131

In symplectic geometry, the Fukaya category of a symplectic manifold is about as important as DbCoh is in algebraic geometry. As such, one wouldn't expect a totally topological way to characterize the Fukaya category of a symplectic manifold. However, it turns out that in a large class of non-compact symplectic manifolds, one expects to have a topological characterization; more surprisingly, it seems that the stable homotopy theory of Lagrangian cobordisms may recover the Fukaya category altogether. We'll begin with some basics of Fukaya categories, illustrate how there is a functor of oo-categories from a category of Lagrangian cobordisms of M to its Fukaya category, and explain structural theorems that move us closer to proving a conjecture that the Fukaya category can be recovered from the category of Lagrangian cobordisms.