## **Topology Seminar**

## Marc Hoyois

of MIT will be speaking on

## Secondary K-theory and the categorified Chern character

on October 26 at 4:30 in MIT Room 2-131

The secondary K-theory of a derived stack X is the K-theory of 2-vector bundles on X, also known as smooth proper k-linear dg-categories when  $X = \operatorname{Spec}(k)$ . It receives nontrivial maps from several interesting invariants: the Brauer spectrum of X, the iterated K-theory K(K(X)), and the Grothendieck ring of varieties (if X is a field of characteristic zero). Toën and Vezzosi have constructed a character map associating to every 2-vector bundle a torus-invariant function on the double free loop space of X. I will explain how to refine their construction to obtain a secondary Chern character on secondary K-theory. This involves a localization theorem for traces in symmetric monoidal  $(\infty,2)$ -categories and a categorified version of the ordinary Chern character, which is a functor from noncommutative mixed motives over X (in the sense of Kontsevich) to  $S^1$ -equivariant perfect complexes on LX. This is joint work with Sarah Scherotzke and Nicolò Sibilla.