

# Topology Seminar

**Angélica Osorno**

of MIT will be speaking on

## An Infinite Loop Space Structure for $K$ -theory of Bimonoidal Categories

on April 13 at 4:30 in  
MIT Room 2-131

In recent work of Baas-Dundas-Richter-Rognes, the authors introduce the notion of the  $K$ -theory of a bimonoidal category  $R$ , and show that it is equivalent to the algebraic  $K$ -theory space of the ring spectrum  $HR$ . In this thesis we show that  $K(R)$  is the group completion of the classifying space of the 2-category  $Mod_R$  of modules over  $R$ , and show that  $Mod_R$  is a symmetric monoidal 2-category. We explain how to use this symmetric monoidal structure to produce a  $\Gamma$ -(2-category), which gives an infinite loop space structure on  $K(R)$ . We show that the equivalence mentioned above is an equivalence of infinite loop spaces.