

# Topology Seminar

**Rune Haugseng**

of MIT will be speaking on

## Weakly Enriched Higher Categories

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

Categories enriched in symmetric monoidal categories such as spectra turn up in various places in algebraic topology. Unfortunately these can be difficult to work with in a homotopically meaningful way, which suggests that for many purposes it would be better to work with less rigid structures, where composition is only associative up to coherent homotopy. In this talk I will introduce a general theory of such weak or homotopy-coherent enrichment, built using a non-symmetric variant of Lurie's infinity-operads. I will then describe how the correct homotopy theory of these enriched infinity-categories can be constructed as a localization of a homotopy theory defined using infinity-operads; this is joint work with David Gepner. In addition, I will discuss some comparison results and, time permitting, mention analogues of natural transformations and correspondences in this setting.