

# Algebra/Topology Seminar

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## GENERALIZING THE TANGLE HYPOTHESIS TO $(\infty, n)$ -CATEGORIES

Thursday, March 12, 2026  
3:00 p.m. in Massry B012

ABSTRACT. Baez and Dolan's 1995 formulation of the Tangle Hypothesis suggests, among other things, that monoids can be viewed as categories with a single object, with the monoidal structure encoded by composition. In this talk, we extend this perspective to higher categories: a monoidal  $(\infty, n - 1)$ -category corresponds to an  $(\infty, n)$ -category with one object. We define and motivate  $(\infty, n)$ -categories and describe the models that make this correspondence precise, focusing on  $\Theta_n$ -spaces. The talk is intended to be self-contained and will not assume prior knowledge of higher category theory.