

A FORMAL CATEGORY THEORY FOR ∞ -CATEGORIES

EMILY RIEHL

“Formal category theory” is category theory applied to itself. In this talk, we explain how the notion of a 2-topos, as axiomatized by Weber and Street, provides a framework for defining standard categorical structures—adjunctions, limits, cartesian fibrations, the Yoneda embedding, pointwise Kan extensions—in which the expected interrelationships between these notions can be proven. We then describe joint work in progress with Dominic Verity to adapt the 2-topos framework to develop a model-independent formal category theory of $(\infty, 1)$ -categories.

JOHNS HOPKINS UNIVERSITY