



# Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

**Dienstag, 22. April 2025**

17 Uhr, Geom H4

Prof. David Gepner  
(Johns Hopkins University)

Title:

Lax constructions in higher category theory

Abstract:

The theory of infinity-categories, developed by Joyal, Lurie, and many others, has become an essential tool now in several areas of mathematics. Still, for many purposes, it is necessary to pursue a further generalization, in which noninvertible morphisms of any dimension are allowed. This leads naturally to the study of lax phenomena in higher category theory, where constructions such as limits and colimits are replaced by their lax variants. Fortunately, we can leverage certain fundamental lax shapes in order to study higher categories “geometrically”. In this talk we will consider certain basic higher categorical shapes and their combinatorics. In particular, we will recall the lax Gray tensor product and the lax join, and use these to understand lax (co)limits and fibrations in this setting. Much of this talk will report on joint work with Hadrian Heine.

**Vor dem Vortrag (ab 16.30 Uhr) stehen im Foyer vor Hörsaal H4  
Kaffee und Tee bereit.**