

Introduction to (∞, n) -categories

The goal of my two-part lecture series is to explain the definition of a (framed) topological quantum field theory (TQFT). A TQFT is defined as a symmetric monoidal functor from the (∞, n) -category $\text{Bord}_n^{\text{fr}}$ of framed bordisms.

In the first lecture, we will introduce the foundational concepts of (symmetric monoidal) (∞, n) -categories, setting the stage for the study of TQFTs.

In the second lecture, we define the (∞, n) -category $\text{Bord}_n^{\text{fr}}$ and introduce TQFTs.

Finally, we discuss the Cobordism Hypothesis, a remarkable result asserting that a TQFT is determined entirely by its value on a point.

Author: AKASAKA, Keima (Chiba University)