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*Cubical models of higher category theory*

Cubical sets provide an alternative to simplicial sets as a combinatorial model for spaces a.k.a.  $\infty$ -groupoids. Joyal showed that simplicial sets also carry a model structure presenting  $(\infty, 1)$ -categories. However, the cubical counterpart of his result has not been established.

The goal of this project is to develop workable foundations of  $(\infty, 1)$ -category theory in the category of cubical sets. To this end, in joint work with Christian Sattler and Liang Ze Wong, we define four model structures on categories of (marked and unmarked) cubical sets and explore some of their properties.

This part 1 of a 2-part series given by Chris Kapulkin and Zach Lindsey.