

TOPOLOGY SEMINAR

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Cubical models of higher categories without connections



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Zoom link:

<https://uregina-ca.zoom.us/j/99127226830?pwd=bnFQR1R3UUdyWUxqSS9JMEExMRIZwZz09>

Abstract: Cubical sets with connections model $(\infty, 1)$ -categories via the cubical Joyal model structure, constructed and shown to be equivalent to the Joyal model structure on simplicial sets by Doherty–Kapulkin–Lindsey–Sattler. In the same work, an analogous model structure was constructed on the category of cubical sets without connections (i.e., having only faces and degeneracies), but was not shown to be equivalent to any other model of $(\infty, 1)$ -categories.

In this talk, we will review the cubical Joyal model structure on cubical sets without connections and discuss the proof that it is Quillen equivalent to the Joyal model structure on simplicial sets, using a construction by which a fibrant cubical set without connections can be equipped with connections via lifting. This talk is based on the paper of the same title, arXiv:2207.03636.