

NEW MODEL STRUCTURES ON SIMPLICIAL SETS

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ABSTRACT. In the way Kan complexes and quasi-categories model up-to-homotopy groupoids and categories, can we find model structures on simplicial sets which give up-to-homotopy versions of more general objects? We investigate this question, with the particular motivating example of 2-Segal sets. Cisinski's work on model structures in presheaf categories provides abstract blueprints for these new model structures, but turning these blueprints into a satisfying description is a nontrivial task. As a first step, we describe the minimal model structure on simplicial sets arising from Cisinski's theory.

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