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*Cubical sets and the homotopy coherent nerve*

Cubical sets are a well-studied model for the homotopy theory of spaces, providing in many cases a convenient alternative to simplicial sets. However, while there is only one category simplicial sets, there are multiple categories of cubical sets, depending on the choice of morphisms in the indexing category  $\square$ .

For a suitable choice of the category  $\square$ , we construct a topology on it, the sheaves for which are precisely simplicial sets. That gives a full embedding of the category of simplicial sets into the category of cubical sets. We further generalize several constructions of higher category theory from simplicial sets to cubical sets, including the homotopy coherent nerve and Lurie's straightening-unstraightening construction.

This talk is based on joint work with Vladimir Voevodsky "Cubical approach to straightening".