An open hypergraph axiom

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The open graph axiom OGA was introduced by Todorčević as a combinatorial intermediary between abstract forcing axioms and their applications. It states that every open graph on a separable metric space either admits a coloring in countably many colors or else contains an uncountable complete subgraph. It is consistent relative to ZFC and follows from the proper forcing axiom. It has many applications related to, for instance, gaps, the bounding number and automorphisms of reduced products. In this talk, we give an introduction to the open graph axiom and discuss a new higher dimensional version for hypergraphs that arose from ideas in descriptive set theory in work in progress with Philipp Schlicht and Zoltán Vidnyánszky.