

Coloring uniform simple hypergraphs with few edges  
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A hypergraph is *simple*, if every two distinct edges have at most one common vertex. A well-known problem in hypergraph coloring is to estimate  $m^*(r, k)$  – the minimum number of edges in an  $r$ -uniform simple hypergraph that is not  $k$ -colorable. In this talk, we discuss the bounds on  $m^*(r, k)$  obtained in the classical paper by Erdős and Lovász. We somewhat improve some of their bounds and generalize results to  $b$ -simple hypergraphs, i.e., the hypergraphs in which no two edges have more than  $b$  vertices in common. The talk is based on joint works with M. Kumbhat and V. Rödl.