

Reverse math of Borel combinatorics

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Various vertex coloring, edge coloring and perfect matching theorems are true classically but fail when asking for Borel colorings/matchings on Borel graphs. However, in HYP, whether these theorems hold or not in the Borel context hinges on whether the Borel graphs are assumed to be regular, or more generally the ease with which one can pass from a vertex to a complete list of its neighbors. We go into more details on this distinction and its implication for analyzing theorems of Borel combinatorics in simple models other than HYP.

Joint with Towsner and Weisshaar.