Combinatorics
Seminar

# *A Ramsey Class of Steiner Systems*

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**Abstract:** We construct a Ramsey class whose objects are Steiner systems. In contrast to the situation with general $r$-uniform hypergraphs, it turns out that simply putting linear orders on their sets of vertices is not enough for this purpose: we also have to strengthen the notion of subobjects used from "induced subsystems" to something we call "strongly induced subsystems". Moreover we study the Ramsey properties of other classes of Steiner systems obtained from this class by either forgetting the order or by working with the usual notion of subsystems. This leads to a perhaps surprising induced Ramsey theorem in which *designs* get coloured. This is joint work with Vindya Bhat, Jaroslav Nešetřil, and Vojtěch Rödl.

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Mathematics and Science Center: W301

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