

Model theory in Ramsey theory

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Ramsey theory for finite structures has seen rich development in the recent decades. We will talk about two different directions we have taken to study interlacement of Ramsey theory and model theory. In a recent work with Lynn Scow, we take a new perspective on Scow's notion of semi-retractions, which relates two structures in (typically) different languages and we show the optimal conditions under which semi-retractions transfer Ramsey properties. We will note that semi-retractions have a natural relationship with a categorical notion of pre-adjunctions.

With Mirna Džamonja, Rehana Patel, and Lynn Scow, we investigate big Ramsey degrees of countable ultraproducts of finite structures with respect to internal and external colourings. While we get a general positive result for internal colourings, our results for external colourings thus far depend on the Continuum Hypothesis.

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