Multicoloured Containers and Graphon Entropy (Part II)

Victor Falgas-Ravry (Vanderbilt University), Kelly O’Connell (VU), Johanna Strömberg* (VU), Andrew Uzzell (University of Nebraska–Lincoln).

In recent breakthroughs, Saxton–Thomason [1] and Balogh–Morris–Samotij [2] developed powerful theories of containers. Their results have had many important applications in counting and characterizing typical graphs with a given property. We generalise their container results to multicoloured containers and arbitrary hereditary graph properties. Using the multicoloured containers we recover some of the graph entropy results due to Hatami–Janson–Szegedy [3] and extend them to $k$–decorated graphons. Conversely, we show how container results can be deduced from statements on the entropy of graph limits.

Keywords: graphons, containers, entropy