
LUCAS MOL, Dalhousie University

On the uniformity dimension of hypergraphs

For a hypergraph $H = (V, E)$ and a field \mathbb{F} , a weighting of H is a map $f : V \rightarrow \mathbb{F}$. A weighting is called *stable* if the sum of the weights on each edge of H is constant. The set of all stable weightings of H forms a vector space over \mathbb{F} called the *uniformity space* of H over \mathbb{F} , and its dimension is called the *uniformity dimension* of H over \mathbb{F} . For $l \geq 2$ the uniformity dimension of random l -uniform hypergraphs is shown to be almost surely 1. The uniformity dimensions of some highly structured hypergraphs are determined.