JASON SEMERARO, University of Leicester

Higher tournaments, hypergraphs, automorphisms and extremal results

In 2017, Karen Gunderson and I use switching classes of tournaments to provide constructions of r-hypergraphs with the maximum number of hyperedges, subject to the condition that every set of $r+1$ vertices spans at most 2 hyperedges. Here we assume $r \geq 3$. A d-tournament is a set together with an inductively defined orientation on each of its d-sets. Generalising results of Babai–Cameron, we show that 3-tournaments admit a switching operation and use our results to obtain some new lower bounds for extremal numbers.