Hamilton ℓ-cycles in randomly perturbed hypergraphs

Richard Mycroft

University of Birmingham

A theorem of Bohman, Frieze and Martin states that if a graph G of linear minimum degree is 'perturbed' by the addition of a linear number of uniformly-random edges, then the resulting graph is Hamiltonian with high probability (by contrast, $O(n \log n)$ edges must be added to give the same outcome if G is empty). Recently Krivelevich, Kwan and Sudakov proved an analogous result for loose Hamilton cycles in hypergraphs. In this talk I will present corresponding results for Hamilton ℓ-cycles in hypergraphs for each $2 \leq \ell \leq k-1$, and outline their proofs; these proceed by an absorbing method in which the absorbing and connecting structures are formed by a combination of fixed edges and random edges. This is joint work with Andrew McDowell.