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THE THRESHOLD FOR A RAINBOW F -FACTORS AND A SPREAD CONDITION FOR COLOURINGS

We establish the threshold for a randomly coloured random graph to contain a rainbow copy of an F -factor (where F is any fixed 1-balanced graph), answering a question of Han and Yuan. Along the way we prove a theorem generalising recent work of Han and Yuan, where instead of rainbow colourings we consider a more general class of colourings satisfying a natural spread condition. The proof also involves several careful couplings including a coupling technique of McDiarmid (twice) and a coupling of Riordan which translates between copies of F in $G(n, p)$ and the r -uniform random hypergraph (where r is the number of vertices of F).

This is joint work with Annika Heckel.