

Universal sequences and Euler tours in hypergraphs

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We show that a quasirandom k -uniform hypergraph G has a tight Euler tour subject to the necessary condition that k divides all vertex degrees. The case when G is complete confirms a \$100 conjecture of Chung, Diaconis and Graham from 1989 on the existence of universal cycles for the k -subsets of an n -set.

Our proof is based on random walks and the proof of the existence of H -designs (by Glock, Kühn, Lo and Osthus), i.e. decompositions of a complete hypergraph into copies of an arbitrary hypergraph H (subject to divisibility conditions).