

MONOCHROMATIC TIGHT CYCLE PARTITIONS IN EDGE-COLOURED COMPLETE k -GRAPHS

Debmalya Bandyopadhyay

dxb209@student.bham.ac.uk

University of Birmingham

(This talk is based on joint work with (Allan Lo).)

Let $K_n^{(k)}$ be the complete k -uniform hypergraph on n vertices. A tight cycle is a k -uniform graph with its vertices cyclically ordered so that every k consecutive vertices form an edge, and any two consecutive edges share exactly $k - 1$ vertices. A result by Bustamante, Corsten, Frankl, Pokrovskiy and Skokan shows that all r -edge coloured $K_n^{(k)}$ can be partitioned into $c_{r,k}$ vertex disjoint monochromatic tight cycles. However, the constant $c_{r,k}$ is of tower-type. In this work, we show that $c_{r,k}$ is a polynomial in r .