



OCT
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Illinois State University
Discrete Math
Seminar



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University of South
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2-2:50PMCT
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MINIMUM COLOR DEGREE THRESHOLDS FOR RAINBOW SUBGRAPHS

Let $G = (V, E)$ be a graph on n vertices and let $c : E \rightarrow \mathbb{N}$ be a coloring of the edges of G . The color degree $d^c(v)$ of a vertex $v \in V$ is the number of distinct colors that appear on the edges incident to v . We let $\delta^c(G) = \min_{v \in V} \{d^c(v)\}$ be the minimum color degree of G . In 2013, H. Li proved that if $\delta^c(G) \geq (n + 1)/2$, then G contains a rainbow triangle and this is tight as witnessed by a properly edge-colored balanced bipartite graph. In this talk, we will explore generalizations and extensions of this result. In particular, for $\ell \geq 4$, we will discuss the minimum color degree threshold for the existence of a rainbow ℓ -clique. This is joint work with Andrzej Czygrinow and Brendan Nagle.