Combinatorics and Graph Theory Seminar

Wednesday, September 3, 2014

3:00 pm in Hume 331

Triangle-free subgraph with high fractional chromatic number

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ABSTRACT

A classic theorem states that for any k and l, there exists a graph with girth at least l, and chromatic number at least k. In 1970's, Erdős and Hajnal proposed a conjecture that for any k, l, there exists a number $f(k,l)$, such that if G has chromatic number at least $f(k,l)$, then it contains a subgraph with chromatic number at least k and girth at least l. In 1977, Rödl proved that it is true for $l = 3$, that is, if the chromatic number is sufficient large enough, that it contains a triangle-free subgraph with large chromatic number. Recently, we proved an analogous result for fractional chromatic number: for any k, there exists a $f(k)$, such that if the fractional chromatic number is at least $f(k)$, then it contains a triangle-free subgraph with fractional chromatic number at least k.

This is joint work with Professor Bojan Mohar at Simon Fraser University.