Analysis Seminar

Coloring of Graphs Avoiding Bicolored Paths of a Fixed Length

By

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Abstract: The problem of finding the minimum number of colors to color a graph properly without containing any bicolored copy of a fixed family of subgraphs has been widely studied. Most well-known examples are star coloring and acyclic coloring of graphs (Grüunbaum, 1973) where bicolored copies of P_4 and cycles are not allowed, respectively. We introduce a variation of these problems and study proper coloring of graphs not containing a bicolored path of a fixed length and provide general bounds for all graphs. A P_k-coloring of an undirected graph G is a proper vertex coloring of G such that there is no bicolored copy of P_k in G; and the minimum number of colors needed for a P_k-coloring of G is called the P_k-chromatic number of G; denoted by $s_k(G)$. We found bounds on s_k(G) for all graphs. Moreover, we find the exact values for the Pk-chromatic number of theproducts of some cycles and paths for k = 5; 6. This is joint work with Alaittin Kırtışoğlu.

Date: Thursday, March 24, 2022
Time: 18:00-19:00, GMT+3
Place: ZOOM

To request the event link, please send a message to goncha@fen.bilkent.edu.tr