

1164-05-10

Alexandr Kostochka* (kostochk@illinois.edu), **Andre Raspaud** and **Jingwei Xu**.

Injective edge-coloring of graphs with given maximum degree. Preliminary report.

A coloring of edges of a graph G is injective if for any two distinct edges e_1 and e_2 , the colors of e_1 and e_2 are distinct if they are at distance exactly 1 in G or in a common triangle. We prove that the injective chromatic index of graphs with maximum degree Δ and chromatic number χ is at most $27\chi\Delta \ln \Delta$ and compare the bounds on the injective chromatic index with those on the strong chromatic index. We also show that the injective chromatic index of each cubic planar graph is at most 6, which is tight. (Received December 02, 2020)