GRAPH POLYNOMIALS
AND CHOOSABILITY OF PLANAR GRAPHS

Jarosław Grytczuk

Politechnika Warszawska

A famous theorem of Thomassen asserts that every planar graph is 5-choosable. Voigt proved that this result is optimal by exhibiting a non-4-choosable planar graph. We prove that from every planar graph one may delete a matching so that the resulting graph is 4-choosable. The proof uses graph polynomials and is based on Combinatorial Nullstellensatz of Alon.

Joint work with Xuding Zhu.