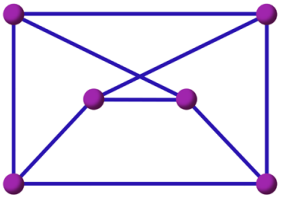

SEMINARIUM
MATEMATYKA DYSKRETNA

wtorek, 6 marca 2012 r. godz. 12.45, s. 304 A3/A4

ON NONPLANARITY OF CUBIC GRAPHS

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A cubic graph is nonplanar if and only if it contains a subgraph homeomorphic to $K_{3,3}$. There are known several important measures for the nonplanarity of a graph G. For example, the minimum number of crossings in an immersion of G in the plane, the minimum number of edges whose removal from G defines a planar graph and the genus. The corresponding numbers are denoted by $cr(G)$, $ed(G)$ and $g(G)$. The corresponding decision problems for these invariants are known to be NP-complete. In this talk, we review some well known and recent results on the complexity of the problems mentioned above in more details.

We discuss relations between the invariants $ed(G)$, $g(G)$ and $cr(G)$ and estimate their values for some special classes of cubic graphs G. We also will speculate about polyhedral embeddings of cubic graphs G and minimal triangulations of surfaces in the context of finding the genus $g(G)$ for these graphs.