# COMBINATORICS SEMINAR
# On The Maximum Number Of Edges In $K$-Quasi-Planar Graphs

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Abstract:

A topological graph is called *$k$-quasi-planar*, if it does not contain $k$ pairwise crossing edges. It is conjectured that for every fixed $k$ the maximum number of edges in a $k$-quasi-planar graph on $n$ vertices is $O(n)$. We provide, for the first time, an affirmative answer to the case $k = 4$. We also give the simplest proof and the best upper bound known, for the maximum number of edges in 3-quasi-planar graphs on $n$ vertices. Moreover, we show a tight upper bound for 3-quasi-planar graphs in which every pair of edges meet at most once.

Joint work with Gabor Tardos.