# GeomTop Seminar: Connectivity of the Flip-Graph of Triangulations

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We investigate the connectivity of the flip-graph of all (full ) triangulations of a given finite planar point set P in general position and prove that, for n:=|P| large enough, both edge- and vertex-connectivity are determined by the minimum degree occurring in the flip-graph, i.e. the minimum number of flippable edges in any triangulation of P. It is known that every triangulation allows at least (n-4)/2 edge-flips.This result is extended to so-called subtriangulations, i.e. the set of all triangulations of subsets of P which contain all extreme points of P, where the flip operation is extended to bistellar flips (edge-flips, and insertion and removal of an inner vertex of degree three). Here we prove (n-3)-edge-connectedness (for all P) and (n-3)-vertex-connectedness of n large enough ((n-3) is tight, since there is always a subtriangulation which allows exactly $n-3$ bistellar flips). This matches the situation known (through the secondary polytope) for so-called regular triangulations.(joint work with Uli Wagner, IST Austria)

### Wednesday, March 6, 2019 01:00pm - 02:15pm
Mondi Seminar Room 3, Central Building