



Mathematics and CS Seminar

GeomTop Seminar: Connectivity of the Flip-Graph of Triangulations

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Host: Uli Wagner

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



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.