1107-05-338 **Csaba D. Toth*** (csaba.toth@csun.edu), Los Angeles, CA 91330. *Flip distances and Hamiltonian triangulations.*

It is shown that every triangulation (maximal planar graph) on $n \geq 6$ vertices can be flipped into a Hamiltonian triangulation using a sequence of less than $n/2$ combinatorial edge flips. The previously best upper bound uses 4-connectivity as a means to establish Hamiltonicity. But in general about $3n/5$ flips are necessary to reach a 4-connected triangulation. Our result improves the upper bound on the diameter of the flip graph of combinatorial triangulations on n vertices from $5.2n - 33.6$ to $5n - 23$. It is also shown that for every triangulation on n vertices there is a simultaneous flip of less than $2n/3$ edges to a 4-connected triangulation. The bound on the number of edges is tight, up to an additive constant. (Joint work with Jean Cardinal, Michael Hoffmann, Vincent Kusters, and Manuel Wettstein.) (Received January 18, 2015)