1022-05-12 **Sergi Elizalde*** (sergi.elizalde@dartmouth.edu), Department of Mathematics, 6188 Bradley Hall, Dartmouth College, Hanover, NH 03755. *A bijection between 2-triangulations and pairs of non-crossing Dyck paths.*

Triangulations of a convex polygon are known to be counted by the Catalan numbers. A natural generalization of a triangulation is a k-triangulation, which is defined to be a maximal set of diagonals so that no $k+1$ of them mutually cross in their interiors. It was proved by Jonsson that k-triangulations are enumerated by certain determinants of Catalan numbers, that are also known to count k-tuples of non-crossing Dyck paths.

There are several simple bijections between triangulations of a convex n-gon and Dyck paths. However, no bijective proof of Jonsson's result is known for general k. Here we solve this problem for $k=2$, that is, we present a bijection between 2-triangulations of a convex n-gon and pairs (P,Q) of Dyck paths of semilength $n-4$ so that P never goes below Q. The bijection is obtained by constructing isomorphic generating trees for the sets of 2-triangulations and pairs of non-crossing Dyck paths. (Received August 03, 2006)