

1072-05-124

Nathan Reading* (nathan_reading@ncsu.edu). *Generic rectangulations and pattern-avoiding permutations.*

A rectangulation is a tiling of a rectangle by rectangles. The rectangulation is called generic if no four of its rectangles share a corner. We will consider the problem of counting generic rectangulations (with n rectangles) up to combinatorial equivalence. This talk will present and explain an initial step in the enumeration: the fact that generic rectangulations are in bijection with permutations that avoid a certain set of patterns. I will give background information on rectangulations and pattern avoidance. Then I will make the connection between generic rectangulations and pattern avoiding permutations, which draws on earlier work with Shirley Law on “diagonal” rectangulations. I will also explain how this result relates to combinatorial Hopf algebras and to the lattice theory of the weak order on permutations. (Received June 24, 2011)