1116-05-393 Maria Monks Gillespie* (monks@math.berkeley.edu). Combinatorics of the q, t-symmetry relation in Macdonald polynomials.

The Macdonald polynomials $\tilde{H}_\mu(X; q, t)$ are certain symmetric functions in the variables $X = \{x_1, x_2, \ldots\}$ with coefficients in $\mathbb{Q}(q, t)$. Arising naturally in the context of the geometry of the Hilbert scheme of points in the plane, these polynomials also exhibit a beautiful symmetry relation in the variables $q$ and $t$. We investigate the combinatorics of this symmetry relation in light of the combinatorial formula for the Macdonald polynomials discovered by Haglund, Haiman, and Loehr in 2004. The relation is a strict generalization of the well-known equidistribution of the Mahonian statistics inv and maj on permutations. (Received August 30, 2015)