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Adriano M Garsia* (`garsia@math.ucsd.edu`), 4695 Mt Armet Dr, San Diego, CA 92117. *Some open problems in the Theory of Macdonald Polynomials.*

Let Pnk be the collection of k-bounded partitions of n. The Macdonald polynomials indexed by these partitions are jig-saw puzzles put together from bi-colored pieces decomposing the Hall-Littlewood polynomials indexed by the same partitions.

In this talk we will present some computer data showing how the elements of these collections can be obtained from one another by changing bi-colors. This process is beautifully explained by some (still unproved) representation theoretical conjectures regarding the bi-graded Grais-Haiman modules. (Received March 11, 2008)