1012-05-224　　　　**J Morse***, Department of Math, Coral Gables, FL 33134, and **L Lapointe**. *k-Tableaux and the k-Schur functions.*

The k-Schur functions arose from our study of an open problem on Macdonald polynomials. We have shown that they satisfy properties refining ideas inthe theory of Schur functions such as Pieri rules, Kostka numbers, the Young lattice and Young tableaux. More generally, these functions play a geometric role in the quantum cohomology that mimics the Schur function role in the cohomology of the Grassmannian. In particular, certain Gromov-Witten invariants are precisely k-Littlewood Richardson coefficients for products of k-Schur functions. We will discuss these developments, focusing on how the refined "k-tableaux" have been, and continue to be, an important tool in our study. (Received September 20, 2005)