1019-46-182   **Michael Anshelevich***, Department of Mathematics, Texas A&M University, Mail Code 3368, College Station, TX 77843-3368. *Combinatorics of free Wick products.*

Free Wick products are certain polynomials in many variables. Their importance lies in their relation to Wick product operators on a free Fock space, and to (multiple) stochastic integrals of free Lévy processes. A number of natural combinatorial questions—find the coefficients of these polynomials, the coefficients in the expansion of regular monomials in the basis of Wick products, and the coefficients in the expansion of products of Wick polynomials in the basis of Wick products—have explicit answers, best expressed in the diagrammatic language. All of them involve various sub-classes of non-crossing diagrams. Time permitting, we will also comment on the classical and q-deformed versions of these results. (Received August 14, 2006)