Dmitry N Kozlov* (kozlov@math.kth.se). Discrete models for algebraic invariants of spaces of polynomials.

The space of all hyperbolic polynomials is naturally stratified by the multiplicities of roots. These strata are indexed by number partitions, and in this talk I will concentrate on the problem of computing their homotopy type.

After remarking on some general facts (such as stabilization theorems), I will present explicit combinatorial answers for various classes of strata. Then, I will outline the connection between 3,1,...,1,1 strata and complexes of directed forests.

Finally, I will look at the notion of complexity of resonances, in the context of the resonance category. The latter is a canonical object encoding the combinatorics of the multiplicity stratifications of symmetric smash products. (Received August 08, 2002)