Multiplicity free actions and quantum Ornstein-Uhlenbeck processes

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Abstract

We will consider some generalizations (related to group actions) of the binomial coefficients, defined for partitions of natural numbers. Next, we will use the generalized coefficients to define some simple birth and death processes on partitions, which have nice interpretations in terms of the dynamics of growth of a population with some distinguished subpopulations. Finally, we will show that the birth and death processes are essentially the quantum Ornstein-Uhlenbeck processes studied by Philippe Biane.

This is joint work with Marcin Świeca (Politechnika Warszawska).