

# 0-1 laws in asymptotic combinatorics and central markov measures for continuous graphs

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The concepts of continuous (continual) graded graphs of a special type are introduced. For such kind of continuous graphs the sets of finite paths are convex finite-dimensional compacts, and the central measures are defined by normalized Lebesgue measures on these compacts. They set co-transition probabilities of the central measures. The main example of such graphs are Gelfand-Cetlin type graphs, and graph of spectra of infinite Hermitian matrices.

The problem of describing central measures on the set of paths of such graphs acquires a new character in comparison with previous works on this topic (Pickrel, Vershik-Olshansky), and reduces to the establishment of surprising 0-1 laws for non-stationary Markov chains, or in another way to problems of coincidence or mismatch of geometric and general boundaries of random walks. There is an amazing internal parallelism between lists of central measures of degenerate type for Hermitian matrices (Wishart measures) and for Young graph (discrete Thoma measures). Even more surprising is the internal similarity between the standard Gaussian measure (GOA or GUI) on matrices and the Plancherel measure on infinite Young diagrams. This work is in progress and partially carried out in cooperation with F.Petrov.

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