Mathematics > Probability

Large Deviations for Non-Crossing Partitions

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We prove a large deviations principle for the empirical law of the block sizes of a uniformly distributed non-crossing partition. As an application we obtain a variational formula for the maximum of the support of a compactly supported probability measure in terms of its free cumulants, provided these are all non-negative. This is useful in free probability theory, where sometimes the R-transform is known but cannot be inverted explicitly to yield the density.

Subjects: **Probability (math.PR)**

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