LIMIT THEOREMS FOR THE HIERARCHY OF FREENESS

Uwe Franz
Romuald Lenczewski

Abstract: The central limit theorem, the invariance principle and the Poisson limit theorem for the hierarchy of freeness are studied. We show that for given $m \in \mathbb{N}$ the limit laws can be expressed in terms of non-crossing partitions of depth smaller than or equal to $m$. For $\mathcal{A} = C[x]$, we solve the associated moment problems and find explicitly the discrete limit measures.

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