

# **A probabilistic approach to the Erdős-Kac theorem for additive functions**

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## **Abstract**

We present a new probabilistic approach to obtaining the rates of convergence in the Erdős-Kac theorem for additive functions. In this approach, we formulate the problem in terms of a conditional sum of independent random variables and work directly on the spaces of random variables without any use of the Fourier analytic method, which has been the main approach in other works on this theorem in the literature. Our results are more general than the existing ones. This work is done jointly with Arturo Jaramillo and Xiaochuan Yang.