

# Infinitesimal distribution of finite free convolutions

Poster session  
Tuesday-16:30

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Introduced independently by Szegő and Walsh in the 1920s, additive and multiplicative finite free convolutions are operations on the set of polynomials with real roots. In recent years, they have regained some interest after being rediscovered in the 2010s by Marcus, Spielman, and Srivastava in connection with Ramanujan bipartite graphs and the Kadison-Singer problem. The term finite free was added due to the fact that these operations converge to the additive and multiplicative convolution of measures from free probability of Voiculescu, so the former can be regarded as finite dimensional versions of the latter. In this work, we determine the infinitesimal distributions arising from these two operations, yielding a more precise description of the convergence to their counterparts from free probability.

This is a joint work with O. Arizmendi (CIMAT) and D. Perales (Texas A&M)

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