

Probabilistic Operator Algebra Seminar

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Title: *Limit theorems for multiplicative convolutions in classical and bi-free probabilities*

Bercovici and Pata, Chistyakov and Goetze proved that classical and free limit theorems for sums of independent random variables are somehow equivalent. They also studied products of independent unitary random variables, in which two limit theorems are by contrast, not equivalent. The main cause is that the Levy measure of a classical infinitely divisible distribution on the unit circle may not be unique. In this talk, I will explain similar results for classical and bi-free limit theorems for random vectors in two dimensions. For the unitary case, again two limit theorems are not equivalent. I will try to give a deeper understanding of this non-equivalence, which leads to new results even for the one-dimensional case. This talk is based on joint work with Hao-Wei Huang (arXiv:2007.02775).