

# Probabilistic Operator Algebra Seminar

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Title: *SYK model and  $q$ -Gaussian distribution*

The Sachdev-Ye-Kitaev (SYK) model is a sparse random matrix model, built out of interacting Majorana fermions, which has become quite popular in recent years in physics as a simple model for quantum holography. In some large  $N$  limit its eigenvalue distribution converges to the  $q$ -Gaussian distribution, given by the sum of creation and annihilation operators on the  $q$ -Fock space. Higher correlation functions show in the same limit some features which remind of (though are not the same as) the higher order freeness description of correlations of GUE matrices. I will try to explain all this.