ID de Contribution: **12** Type: **Non spécifié**

On the Injective Norm of Random Tensors and Quantum States

jeudi 21 novembre 2024 16:00 (50 minutes)

The injective norm is a natural generalization to tensors of the operator norm of a matrix. In quantum information, the injective norm is one important measure of genuine multipartite entanglement of quantum states, where it is known as the geometric entanglement. In this paper, we give a high-probability upper bound on the injective norm of real and complex Gaussian random tensors, corresponding to a lower bound on the geometric entanglement of random quantum states, and to a bound on the ground-state energy of a particular multispecies spherical spin glass model. For some cases of our model, previous work used ε-net techniques to identify the correct order of magnitude; in the present work, we use the Kac–Rice formula to give a one-sided bound on the constant which we believe to be tight.

Orateur: DARTOIS, Stéphane (Université Paris-Saclay, CEA)