Mathematics and CS Seminar

Entangled states are typically incomparable

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For two independent random vectors x,y on the n-simplex, what is the probability that x and y are comparable in the majorisation order? For different distributions of x and y, this question has been (independently) studied in probabilistic combinatorics and in quantum information theory. In particular, with an appropriate distribution for x and y, this is equivalent to studying the probability that for two randomly entangled quantum states psi and phi, it is possible to transform phi into psi via local operations and classical communication. With Vishesh Jain and Marcus Michelen, we proved a conjecture of Nielsen, and some related predictions of Cunden, Facchi, Florio and Gramegna, in this direction.In this seminar I plan to introduce the subject, outline our proof of Nielsen's conjecture, and mention some open problems.

Tuesday, June 18, 2024 05:30pm - 06:30pm
Office Bldg West / Ground floor / Heinzel Seminar Room (I21.EG.101)

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