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Seminaires du LPTM , Universite de Cergy Pontoise

Jeudi 25 Octobre 2018, 14 :00
LPTM, 4.13 St Martin II
Domaines : math-ph

Titre : *High-dimensional entanglement in quantum states with positive partial transpose*

Orateur : **Cécilia Lancien (Institut de Mathématiques de Toulouse)**

Résumé : *Genuine high-dimensional entanglement, i.e. the property of having a high Schmidt number, constitutes a resource in quantum processing protocols. On the contrary, states with a positive partial transpose (PPT) are generally considered weakly entangled, as they cannot be distilled into pure entangled states. This naturally raises the question whether high Schmidt numbers are possible for PPT states. This will be the main topic of the talk. I will begin with exhibiting an explicit construction of PPT state that achieves optimal Schmidt number scaling (in the dimension of the subsystems). I will then explain that, in fact, random PPT states typically share this feature. Finally I will study the somewhat opposite problem and show that the PPT property also imposes limitations on the Schmidt number. The talk will be based on arXiv :1802.04975.*