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Seminaires du LPTM , Universite de Cergy Pontoise

Jeudi 19 Septembre 2019, 14 :00
LPTM, 4.13 St Martin II
Domaines : cond-mat

Titre : *"Symmetry, Tan Contact and Spectral Gap in One-dimensional Fermions : A Graph Theory Treatment"*

Orateur : **Jean Decamp (Center for Quantum Technologies, NUS, Singapore)**

Résumé : *"In the limit of strong repulsion, one-dimensional atomic mixtures of fermions realize an effective spin chain, and are thus a clean and controllable platform for the study of quantum magnetism or in the context of quantum computation. In the work I will present you, we interpret this model in terms of spectral graph theory. This well-studied mathematical framework allows us to completely characterize the symmetry properties of the system and to develop a powerful method to compute the Tan contacts associated with certain symmetry classes. In particular, compared to brute force diagonalization, our technique enables us to obtain much more efficiently the energy gap of complex spin mixtures, which is of central importance for the design of adiabatic control of correlated quantum systems."*
