CEA - Saclay 91191 Gif-sur-yvette Cedex
Service de Physique de l'Etat Condensé
SÉMINAIRE

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JEUDI 25 novembre 14h15

Orme des Merisiers SPEC Salle Itzykson, Bât.774

Full conductance distribution in three dimensions: Novel features at strong disorder

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In this talk I will describe the full distribution of conductance at strong disorder in three dimensions within a transfer matrix formulation. Our analytic results confirm numerical evidence that the expected log-normal limit of the distribution is never reached, even in the deeply insulating regime. Moreover, I will show how the variance of the logarithm of the conductance scales with the mean value in a non-trivial way, and the skewness changes sign (the tail becomes the head!) as one approaches the Anderson metal-insulator transition from the deeply insulating limit, all described as a function of a single parameter. The approach suggests a possible single parameter description of the Anderson transition that takes into account the full non-trivial distribution of the conductance.

The seminar will be given in English.

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