

*LABORATOIRE DE PHYSIQUE THÉORIQUE ET MODÈLES  
STATISTIQUES (LPTMS) UMR8626*

BÂTIMENT 100 91405 ORSAY CEDEX - Tél. secrétariat : 01 69 15 73 49 Fax : 01 69 15 65 25

**SÉMINAIRE DE LA FÉDÉRATION DE  
PHYSIQUE STATISTIQUE PARIS-SUD**

**Lundi 6 septembre 2010 à 14h**  
Salle Itzykson, IPhT, Saclay

**John Cardy**  
(University of Oxford)

**Entanglement Entropy in Extended Quantum Systems**

Quantum critical points in extended systems, such as spin chains, are associated with singular behaviour of the quantum entanglement in the ground state between different spatial regions. One way to quantify this is through the entanglement entropy. We argue that these critical singularities have a universal form, which, in 1d, can be understood by conformal field theory and corner transfer matrix methods. These predict unusual corrections to scaling which have been observed in numerical data.

*Un café sera servi à 13h30.*