

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

Mercredi 5 octobre 11h15

Orme des Merisiers SPEC Salle Itzykson, Bât.774

Single electron transfer in between distant quantum dots

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AlGaAs lateral quantum dots have proven to be good candidates for spin qubit implementation: qubit initialization, single qubit rotation and two-qubit operations have been demonstrated successfully. So far, as soon as the electron was leaving the dot system, its quantum information was lost. Nevertheless, understanding how to keep the quantum information of an electron spin while transferring it in between two distant quantum dots is not only a viable solution towards entanglement between distant qubits but also opens new ways of manipulating coherently electron spins via spin-orbit interaction. I will present several strategies to implement single electron transfer and discuss its potentialities for coherent transfer of a single electron spin.

A coffee break will be served at 11h00. The seminar will be given in English.

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