

SEMINAR

COHERENT ELECTRONIC TRANSPORT
AND CURRENT INDUCED
SPIN-ACCUMULATION SEEN THROUGH
STROBOSCOPIC WAVEPACKETS**Prof. PETER BOKES**

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I introduce the orthogonal wavepacket basis set, using the concept of stroboscopic time propagation, tailored to the efficient description of non-equilibrium extended electronic systems. Thanks to three desirable properties of this basis, significant insight is provided into non-equilibrium processes (both time-dependent and steady-state), and reliable physical estimates of various many-electron quantities such as density, current and spin polarization can be obtained. The use of this novel tool is demonstrated for time-dependent switching-on of the bias in quantum transport, and new results are obtained for current-induced spin accumulation at the edge of a 2D doped semiconductor caused by edge-induced spin-orbit interaction.

REMEMBER

Prof. PETER BOKES

Specific Seminar: Coherent electronic transport
and current induced spin-accumulation seen
through stroboscopic wavepackets

DATE: 26 February, 2010

TIME: 12:00

PLACE: IFAE