

Atomic and molecular contacts: Spins, Forces, Photons, Noise

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Using low-temperature scanning tunnelling and atomic force microscopes we prepare contacts to single atoms and molecules. The electron transport is investigated from the tunnelling range to ballistic transport. A degree of control over the structure of the contacts is achieved which has enabled a number of new insight. The talk will address the magneto-resistance of single-atom contacts, magnetic molecular switches, the role of forces, the emission of light and the shot noise of the current through single magnetic atoms.