



Seminarankündigung

Dienstag, 28. Oktober 2008

17:15 Uhr

WSI, Seminarraum S 101

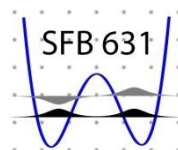
„Electro-optics of single quantum dots„

Prof. Richard Warburton

Heriot-Watt University, School of EPS

Physics Department, David Brewster Building

Edinburgh, UK



Abstract:

A remarkable set of experiments in the last few years has demonstrated that in many ways, a single self-assembled quantum dot mimics a real atom. The key signatures of a few level atom, photon antibunching and Rabi oscillations, have been observed. However, unlike a real atom, a quantum dot can be easily embedded in a field-effect device allowing control not only of the charge trapped on a single dot but also the transition wavelength through the Stark shift. The talk will present a series of experiments on such devices, probing in particular the possibility of using a hole spin rather than an electron spin for a spin qubit. Finally, a fully-tunable microcavity platform will be presented as a way of enhancing the light-matter interaction in these devices.