

Sonderseminar

Am Freitag, **10.06.2011**, um **11.00 Uhr** spricht

Dr. Paul Eastham

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über

"Polariton Condensation and Lasing in Semiconductor Microcavities - Coherence and Dynamics"

Abstract: Semiconductor microcavities support quasiparticles, polaritons, which are formed from hybridizing excitons and photons. They thus provide new opportunities for studying many-particle physics, using quasiparticles which are part matter and part light. Polaritons are bosons, and hence a gas of polaritons can undergo a phase transition into a quantum-condensed state, forming a semiconductor analog of established quantum condensates such as superfluids, superconductors, and atomic BECs. I will give an introduction to this phenomenon, which has now been observed in several experiments, before moving on to discuss two areas of recent development. I will first discuss the coherence properties of the condensate, explaining how recent experiments can be understood with a simple theory, and connecting to the destruction of symmetry-breaking by order-parameter fluctuations in finite systems. I will then discuss how microcavities could be used to develop a new approach to quantum condensation, in which condensation occurs as a purely dynamical effect, without relaxation or equilibration.

Ort: SR 225, Linnéstraße 5

Interessenten sind herzlich eingeladen!