

HL 18 Hauptvortrag Woggon

Zeit: Samstag 09:00–09:45

Raum: TU P270

Hauptvortrag

HL 18.1 Sa 09:00 TU P270

Coupled quantum systems with quantum dots — •ULRIKE WOGGON — FB Physik, Universität Dortmund, Otto-Hahn-Str. 4, D-44227 Dortmund

We will present recent experiments with semiconductor quantum dots as being one part in a coupled quantum system. The coupling of quantum dots to another quantum state such as another quantum dot, confined photons or phonons is investigated by ultrafast spectroscopy. Nature and strength of the quantum mechanical coupling mechanism will be discussed for a few exemplary quantum systems containing quantum dots. We will discuss the distinctly different properties we can gain when two systems are coupled and we will show how the coupling can be controlled, either to maximum (exciton-photon coupling) or minimum coupling strength (exciton-phonon coupling). We will give an insight into fascinating new physical properties we can obtain when two quantum systems are coupled and outline their importance for both fundamental and applied physics.