## Geza Giedke (MPQ, Garching)

## Nuclear Spins in Quantum Dots

We investigate the quantum dynamics of nuclear spins in quantum dots and other nano-structures. We discuss optical methods for preparing the nuclear spin system in well-defined states favorable for quantum information processing. We show how coherent nuclear dynamics can give rise cooperative effects such as super-radiance. We analyse the use of the nuclear spin system for quantum information processing tasks.