

Eugene Wigner Colloquium

event of SFB 910



Nikola Sadzak

AG Nano-Optik, Humboldt-Universität Zu Berlin

“Dynamical decoupling and spectroscopy with a single solid state spin magnetometer”

Defect centers in solid-state materials are important platforms for quantum information and quantum sensing applications. Here, one of the most promising systems is the nitrogen-vacancy (NV) center in diamond. The NV is a stable single photon source having an electron spin triplet that can be optically initialized and readout, and manipulated via radiofrequency pulses. Moreover, the long spin coherence time (up to milliseconds at room temperature) makes it an ideal candidate for a spin qubit or for nano-scale magnetic field detection. In this sense, several dynamical decoupling schemes have been implemented on the NV electron spin in order to achieve even higher coherence times and sensitivities to AC magnetic fields. In this talk we introduce a new control sequence to enhance the nitrogen vacancy sensitivity to DC magnetic fields. Moreover, the same scheme can be used to probe the spectral dynamics of the local spin bath and gain an insight into nano-scale magnetic phenomena.

Thursday, 06.12.18 · 16:15h · EW 202

Technische Universität Berlin · Institut für Theoretische Physik · Hardenbergstraße 36 · 10623 Berlin

www.itp.tu-berlin.de/sfb910