



Seminarankündigung

**Dienstag, 18. Juni 2019
13:00 Uhr**

WSI, Seminarraum S 101

“NV-diamonds for nano- and microscale NMR-spectroscopy”

Abstract: The nitrogen-vacancy center in diamond is a sensitive detector of nuclear magnetic resonance (NMR) signals, especially on short length scales down to a single molecule. However, this technique is limited by low spectral resolution and to pure samples, which precludes practical applications. Here, I will present our recent results where we could overcome these basic problems of NV-NMR and demonstrate high spectral resolution spectroscopy with femtomole sensitivity in a microscopic sample volume. In the second part of the talk, I will talk about upcoming projects in my Emmy Noether group which involve the development of a surface sensitive NV-NMR technology with applications in materials science, catalysis, and bioanalytics.

Relevant publications:

Bucher, D. B., Glenn, D. R., Park, H., Lukin, M. D., Walsworth, R. L. Hyperpolarization-enhanced NMR spectroscopy with femtomole sensitivity using quantum defects in diamond. arXiv:1810.02408 (2018), Science Advances, under review

Glenn, D. R.*, **Bucher, D. B.***, Lee, J., Lukin, M. D., Park, H., Walsworth, R. L., High-Resolution Magnetic Resonance Spectroscopy Using a Solid-State Spin Sensor, Nature 555, 351-354 (2018)

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