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## **Seminar über Ultrafast Science and Technology**

**Referent:** Manuel Unternährer, Institute of Applied Physics, University of Bern

**Titel:** Super-Resolution Quantum Imaging and the Supertwin Project

The spatial resolution of microscopic imaging is limited by the numerical aperture of the used objective lens, due to the Rayleigh/Abbe criterion, and can maximally achieve half a wavelength of the light used for illumination. Quantum states of light can exhibit intensity correlation features which beat this classical resolution limit by using multi-photon interferences. In the project Supertwin, funded through the Horizon 2020 program of the European Union, these quantum states will be harnessed in order to improve resolution in microscopy beyond the classical limit. In this seminar, the concepts of quantum super-resolution imaging are introduced and illustrated intuitively. Supertwin and our work within the project, ranging from multi-photon correlation measurements with a novel type of sensor array to proof-of-principle imaging experiments, is presented.

**Zeit:** Donnerstag, 01.06.2017, 11:15 Uhr

**Ort:** **Hörsaal B116**, Gebäude exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz