



## Physical Sciences Seminar

# 3D Localization of Molecules close to dielectric Surfaces

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**Host: Johann Georg Danzl**

Localization microscopy is based on taking many images of an object, each containing a sparse subset of active molecules that can be individually localized. The entire data set represents the object at very fine spatial details down to the nanometer range. While localizing within the focal plane is relatively straightforward, retrieving depth information is more challenging due to the cigar-shaped point response of microscopes. Several methods which address this problem have been developed over the years. In my talk I will provide a brief introduction of 3D localization methods and put an emphasis on Supercritical Angle Fluorescence (SAF) microscopy, which enables the accurate axial localization of light emitters in close vicinity to the coverslip by exploiting near-field coupling. I will further address the challenges posed by unknown optical aberrations in the imaging system and give an outlook on the use of machine learning algorithms to process the large amounts of data which are often collected in localization microscopy.

**Thursday, October 4, 2018 02:00pm - 03:00pm**  
IST Austria Campus Seminar Room, Lab Building East



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.