

Research Seminar

2pm Friday 11th December 2015

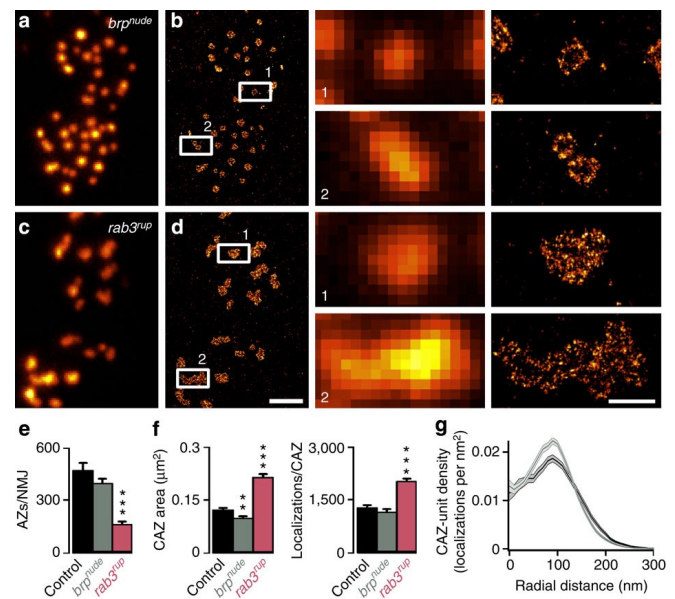
Room: JA5.04

DEPARTMENT OF PHYSICS



Quantitative single-molecule localization microscopy using dSTORM

In the last decade several super-resolution fluorescence methods were developed that bypass the diffraction-barrier of light microscopy. Within the family of super-resolution techniques single-molecule localization microscopy stands out as it provides, besides highest spatial resolution, also access to quantitative information. A powerful technique is direct stochastic optical reconstruction microscopy (dSTORM), which is based on photoswitchable organic dyes.



In this seminar, I will describe the basic principle of dSTORM, elucidate the switching mechanism of organic dyes by applying chemicals and introduce recently developed techniques that use localization data quantitatively. For instance, I will show that fluorophore localizations can be used not only to extract information about the distribution of individual proteins within the active zone of synapses in *Drosophila*, but also to approximate the absolute number of protein copies.

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