Abberior MINFLUX Workshop

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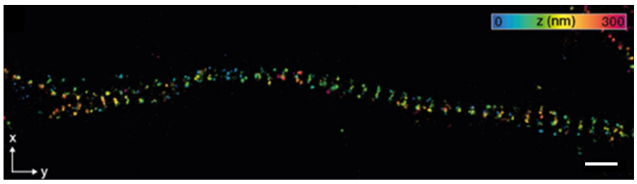
Abstract

Imaging protein complexes with molecular resolution has been on the wish list of researchers for decades. Recently, minimal photon flux (MINFLUX) nanoscopy was developed. In this technique single fluorophores are localized by reading out the fluorescence signal at pre-defined positions in its vicinity. Using a donut-shaped excitation focus allows to determine the localization of the fluorophores with a minimal number of photons and with a spatial resolution of a few nanometers exceeding alternative techniques [1,2]. The implementation of MINFLUX on a common fluorescence microscope stand [3] enables standard imaging workflows and multi-color imaging options which opens the usability to a wide range of applications in biomedicine and life sciences.

In a workshop different biological samples will be imaged with localization precisions below 2 nm in 2D and 3 nm in 3D MINFLUX to study molecular organizations in so far unseen precision.



[1] Balzarotti et al. (2017) Nanometer resolution imaging and tracking of fluorescent molecules with minimal photon fluxes. Science 355, 606–612.

[2] Gwosch et al. (2020) MINFLUX nanoscopy delivers 3D multicolor nanometer resolution in cells. Nature Methods, 17(2), 217–224.

[3] Schmidt et al. (2021) MINFLUX nanometer-scale 3D imaging and microsecond-range tracking on a common fluorescence microscope. Nat Commun. 2021 Mar 5;12(1):1478.

References

[1] Balzarotti et al. (2017) Nanometer resolution imaging and tracking of fluorescent molecules with minimal photon fluxes. Science 355, 606–612.

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