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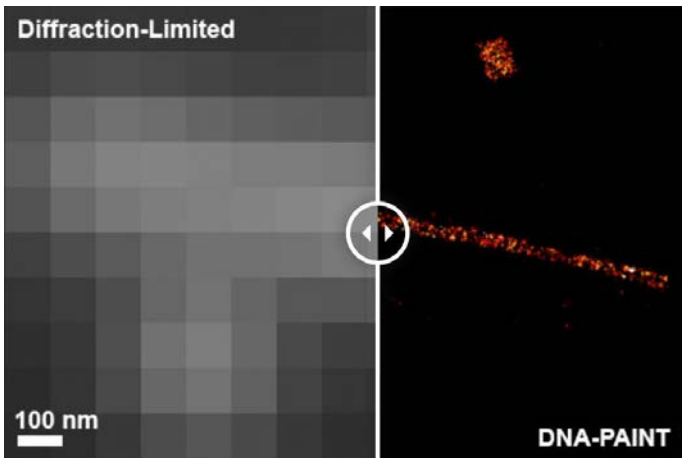
zum

Physikalischen Kolloquium
Montag, 02.05.2016
16:15 Uhr in N24/H13

Dr. Ralf Jungmann
Max-Planck-Institut für Biochemie
Martinsried

Super-Resolution Microscopy with DNA Molecules

Super-resolution fluorescence microscopy is a powerful tool for biological research, but obtaining multiplexed images for a large number of distinct target species in whole cells and beyond remains challenging. Here we use the transient binding of short fluorescently labeled oligonucleotides (DNA-PAINT, a variation of point accumulation for imaging in nanoscale topography) for simple and easy-to-implement multiplexed super-resolution imaging that achieves sub-10-nm spatial resolution *in vitro* on synthetic DNA structures.
We report a multiplexing approach (Exchange-PAINT) that allows sequential imaging of multiple targets using only a single dye and a single laser source. We experimentally demonstrate ten-color super-resolution imaging *in vitro* on synthetic DNA structures as well as four-color two-dimensional imaging and three-color 3D imaging of proteins in fixed cells.
Finally, we demonstrate whole cell imaging using DNA- and Exchange-PAINT and optical sectioning, now allowing DNA-based super-resolution imaging deep inside cells, away from the glass coverslip.



Ab 16.00 Uhr Kaffee, Tee und Kekse vor dem Hörsaal H13

Organisation: Prof. Dr. F. Jelezko, Tel. 23750, Host: Prof. Dr. J. Michaelis, Tel. 23050, off.: 23051