SFB 1078

Protonation Dynamics in Protein Function

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4:15 pm

Hörsaal B
FUB

Colloquium

Prof. Jens Bredenbeck

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Non-Canonical Amino Acids and Other Probes for Advanced Time Resolved Spectroscopies of Proteins

Non-canonical amino acids (ncAAs) allow incorporation of spectroscopic tools into proteins which are optimized for various advanced spectroscopy techniques.
I will report on the design or identification as well as the application of ncAAs and other probes, which are particularly suited for different types of experiments, comprising time resolved IR measurements of protein conformational dynamics, vibrational lifetime measurements that allow to unambiguously obtain local water exposure, 2D-IR studies to measure local dynamics at selected protein sites, VIPER-2D-IR spectroscopy, which utilizes vibronic couplings within the probe to generate 2D-IR signals with up to microsecond lifetimes, and vibrational energy transfer measurements, which employ different ncAAs for injecting and probing vibrational energy to map out transfer pathways in a site selective fashion.

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