



PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik
der Goethe-Universität Frankfurt am Main

Mittwoch, den 10.11.2021, 16 Uhr c.t.
Großer Hörsaal, Raum _0.111, Max-von-Laue-Str. 1

— — — in PRÄSENZ* — — —

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Electron spin resonance spectroscopy of membrane protein complexes: from in vitro to in vivo

Pulsed dipolar electron spin resonance spectroscopy techniques enable the determination of electron-electron dipolar coupling and the interspin distances within a range of materials. Nowadays, these techniques are used for the structural characterization of proteins and nucleic acids. I will introduce the application of pulsed electron double resonance (PELDOR or DEER) spectroscopy combined with site-specific incorporation of spin labels for the characterization of membrane protein complexes. The determination of electron-electron dipolar coupling using a Q-Band (34 GHz) spectrometer equipped with an arbitrary waveform generator (AWG) and the calculation of interspin distances will be discussed. Application of these techniques for the elucidation of conformational heterogeneity, equilibrium dynamics, kinetics, and thermodynamics of membrane protein complexes and the ongoing efforts to perform such experiments in the complex cellular environment will be presented.

Die Dozenten der Physik

local host: Prof. Dr. Jens Bredenbeck, bredenbeck@biophysik.uni-frankfurt.de

* Externe Teilnehmer (keine Angehörigen der Goethe-Universität) können unter 3G Bedingungen teilnehmen, wenn sie sich bis zum 09.11.2021 per E-mail an krellner@physik.uni-frankfurt.de unter Angabe von Vor- und Nachnamen angemeldet haben.