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Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Prof. Irena Zivkovic, Eindhoven University of Technology, NL

Titel: Ultra-high field MRI: how high we can go?

Magnetic resonance imaging (MRI) is the most versatile medical imaging platform that provides superior soft tissue contrast for both body and brain imaging. Since the first implementation in the late seventies, MRI have moved to be the most important diagnostic image modality in the clinic today. In addition, it has become a favourite tool in the research settings, especially within neuroscience, because it can map not only the anatomy but also neuronal activation and function without the use of radiation. Scientists have worked on increasing the sensitivity of MRI, image contrast and spatial resolution to enlarge our understanding of the human anatomy. One obvious way to increase resolution is to increase the spin polarization via increasing the static magnetic field B_0 in MRI. However, a consequence of a larger static magnetic field B_0 is a higher Larmor frequency and a shorter wavelength. This increased frequency complicates RF electronics and detector design and therefore the technology developed for lower fields such as 3 Tesla is difficult to adapt and transfer directly to the ultra-high field 7 Tesla. This talk will discuss the benefits and limitations of moving to the ultra-high field MRI regime.

Zeit: Freitag, 19 März 2021, 10:15 Uhr

Ort: Zoom Link: <https://unibe-ch.zoom.us/j/97081325603>
Meeting ID: 970 8132 5603