**Monday, January 22, 2024,** 15:30 hrs
Wilhelm Wundt Room

# Guest Lecture

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## Optimised navigator-based correction of physiological field fluctuations in multi-echo GRE of the spinal cord

Multi-echo gradient-echo (GRE) sequences are commonly used for anatomical imaging of the spinal cord because they provide excellent contrast between grey matter (GM), white matter (WM), and cerebrospinal fluid (CSF). One of their main limitations is the sensitivity to voluntary and involuntary motion, leading to ghosting artifacts and lower image quality even in compliant subjects. Time-varying B0 fields related to the breathing cycle contribute substantially to the artifact load in the spinal cord. Navigator readouts can be used to measure the intensity of the B0 fluctuations, allowing to demodulate the acquired signal before the image reconstruction. However, the standard navigator processing approach, developed for brain imaging, often fails in the spine, which can even exacerbate the artifacts. Therefore, there is a need for navigator processing specifically tailored to spinal cord imaging. In this study, we explore the effect of optimized processing pipelines for navigator-based correction on the image quality of a multi-echo GRE sequence acquired in the spinal cord at 3T.