Translational Imaging Center, Bern:

Currently Available Methods and Ongoing Projects

Lecture series with speakers from Bern organized by the Translational Imaging Center @ sitem-insel in Bern on current methods and applications at our center

Towards robust quantitative magnetic resonance imaging of the abdomen

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Wednesday, November 13 2024, 16:00

In this talk, I will present my work on enhancing the robustness of arterial spin labeling (ASL) for cerebral perfusion imaging and introduce my current efforts in developing an open-source, phase-cycled balanced steady-state free precession (bSSFP) sequence for quantitative liver relaxometry. My research in ASL has focused on the challenges of low signal-to-noise ratio and quantification inaccuracies caused by variable arterial transit times (ATTs) in the brain. I will discuss three main solutions to these issues: Protocol timing optimization to reduce sensitivity to ATT variability while improving measurement precision. The integration of velocity- and spatially-selective ASL in a single acquisition to ensure robust perfusion measurements, even in cases of severely delayed blood flow. Utilization of ultra-high field (7T) MRI to boost signal and spatial resolution. Currently, I am developing a flexible bSSFP sequence using pypulseq, an open-source, vendor-neutral pulse sequence development framework, enabling me to rapidly implement different readout trajectories and sequence designs. I will share my experience of this development process and present recent results from multi-echo, phase-cycled bSSFP acquisitions using various readout strategies.

The lecture will broadcast via zoom
@https://unibe-ch.zoom.us/j/61954796127?pwd=b25nSWVIVi9PWlV4Vlp3NXpMdjRQdz09

and **do spread the word** to anybody potentially interested *(for further info: bernd.jung@insel.ch).*