

## 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 direct neuronal current imaging with MR: potentials and limitations

**Milena Capiglioni, Msc**

Dept. of Neuroradiology, Inselspital

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Extracting quantitative information on neuronal signals by non-invasive imaging is an outstanding challenge for understanding brain function and pathology. Still, currently established fMRI methods such as BOLD or diffusion, measure neuronal activation indirectly. Stimulus-induced rotary saturation (SIRS) has been recently proposed as a promising tool to detect neuronal fields and reconstruct functional connectivity using MRI. The principle of the technique is based on a double resonance effect produced when the Larmor frequency induced by a Spin Lock (SL) preparation pulse matches the frequency of an oscillating neuronal field.

In this talk, I will present the concepts of magnetic resonance-based neuronal current imaging and the current state of the art in developing this technique. In addition, I will show the potential and limitations of its application in clinical practice.

**The lecture will be held as a zoom meeting, please connect using:**

<https://unibe-ch.zoom.us/j/61954796127?pwd=b25nSWVVi9PWIV4Vlp3NXpMdjRQdz09>

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