



## ISM Lunchtime Seminar Series

The ISM Lunchtime Seminars are online monthly events, which take place on Thursdays, 13:00-13:30h, and are open to all interested colleagues and students. ISM researchers and guest speakers present their work during a 15 min seminar, in the English language, followed by a brief Q&A session.

We are happy to announce our next speaker: **Sarah Merklein, M.Sc.** from the University Hospital Bonn.

**Title:** Cerebello-cerebral functional connectivity after cerebellar stroke as revealed by causal discovery analysis (CDA)

**Abstract:** Cerebellar stroke can impact large-scale brain networks involved in cognition. Here, directed connectivity analysis using causal discovery analysis, specifically the Best Order Score Search algorithm was applied to investigate interactions between the cerebellum and three major networks: salience (SAL), frontoparietal control (FPN), and default mode (DMN) during resting-state fMRI in chronic cerebellar stroke patients ( $n = 21$ ) and healthy controls ( $n = 29$ ). This approach identifies directional interactions among brain regions, enabling the assessment of altered network dynamics following stroke. Group comparisons revealed significantly greater within-cerebellar directed connectivity in patients, suggesting local reorganization. Additionally, patients exhibited chronicity-dependent increases in SAL-driven outputs to both the FPN and DMN, accompanied by a decrease in cerebellum-to-SAL connectivity. These findings indicate a stage-specific reorganization of brain networks in chronic cerebellar stroke, characterized by a shift in network control toward cortically centered salience-network dominance. This reconfiguration may reflect compensatory adaptations in network switching mechanisms after cerebellar damage.

**When:** 9<sup>th</sup> October 2025 at 13:00h **Where:** MS-Teams (to join, please click [here](#))

**Please follow the rules below to make these seminars a success:**

- Please use your real name while entering the meeting. Participants with cryptic names will not be given access to the seminar.
- Please turn off your microphone while the seminar is taking place.
- Please feel free to ask questions!

### Contact information

Please get in touch with [Dr. Annakarina Mundorf](#) or [Dr. Deeksha Malhan](#) for further information.