



11th NeuroEngineering Symposium – Final Program

Themes: Guidance and Imaging in Neurosurgery, Multimodal Neurointensive Care, Deep Brain Stimulation (DBS)

Time: November 7-8, 2024

Venue: Hugo Theorell, North Entrance, Linköping University Hospital, Linköping, Sweden

Deep Brain MRI architecture (DB-MA atlas)

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Understanding the architecture of the human deep brain is especially challenging because of the complex organization of the nuclei and fascicles that support most sensorimotor and behaviour controls. There are scant dedicated tools to explore and analyse this region. Here we took a transdisciplinary approach to build a new deep-brain MRI architecture atlas drawing on advanced clinical experience of MRI-based deep brain mapping. This new tool comprises a young-male-adult MRI template spatially normalized to the ICBM152, containing T1, inversion-recovery, and diffusion MRI datasets (*in vivo* acquisition), and an MRI atlas of 118 labelled deep brain structures. It is open-source and gives users high resolution image datasets to describe nuclear-based and axonal architecture, combining pioneering and recent knowledge. It is a useful addition to current 3D atlases and clinical tools.

Exhibitors:

Elektta, Medtronic, inomed, FluoLink, Medac, SyntheticMR

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