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Area-specific signatures of time-irreversibility in spontaneous neural activity of the mouse brain

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We study time-irreversibility in spontaneous neural activity as a multiscale dynamical phenomenon. Using large-scale Neuropixels recordings across mouse brain areas, we quantify temporal asymmetry from milliseconds to seconds (30–0.5 Hz) with complementary computational measures capturing population-level asymmetry, metastable state fluxes, and state-space divergence. This framework enables systematic analysis of time-irreversible dynamics across brain regions and timescales.

Presenter: Mr ELPELT, Jonas (FIAS)

Session Classification: Short Talk