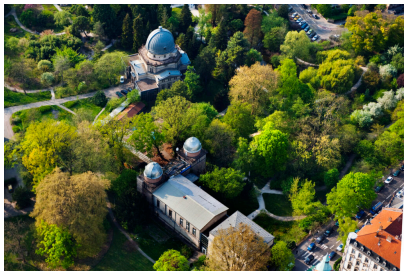

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Mode-induced magnetic field amplification in binary mergers

Tuesday 28 October 2025 10:55 (25 minutes)

In the moments leading up to a binary merger, tides can excite a variety of modes inside neutron stars. I will describe how g-modes, and gravitoinertial modes more generally, excite differential rotations inside the stars in such a manner that dynamo activity can amplify an existing magnetic field there. This has implications for precursor flares, tidal dephasing, and various other phenomena in binary mergers, in a manner that is supported by both linear and non-linear simulations of tidally-forced modes.

Presenter: SUVOROV, Arthur