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## Neutron stars collapsing to black holes in massive scalar tensor theories

*Monday 27 October 2025 17:05 (25 minutes)*

In this talk we discuss a fully 3D numerical evolution code to study neutron stars within the framework of massive-scalar-tensor (MST) theories. Our focus is to study the gravitational collapse of rapidly rotating neutron stars by exploring the parameter space defined by the scalar field couplings and the mass. We investigate how these parameters influence both the dynamical characteristics of the process and the emitted gravitational waveform. We also examine different criteria for stability and how the massive field influences the oscillation modes of the neutron stars.

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