CIDMA CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES
CENTER FOR R&D IN MATHEMATICS AND APPLICATIONS

universidade de aveiro

Gravitational Geometry and Dynamics Group Seminar

Wed., May 7, 2025, at 11h00.

Room: 11.2.25 and **Zoom ID:** 955 4130 8539

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Turbulence in Magnetised Neutron Stars

The magnetic field configuration in the interior of Neutron Stars is an open problem and may be impacted by the influence of a turbulent cascade within the star. Assessing the impact of turbulent flow with numerical simulations requires incredibly high resolution as well as long lived simulations covering multiple Alfven times. We present a series of high resolution simulations of magnetised isolated neutron stars lasting at their longest 1.2s, to assess this issue; the longest lasting and highest resolution such simulations to date. We discuss the impact of the magnetic field on turbulent flow in the star interior, as well its effect deforming the star itself. We also investigate the long term evolution of the magnetic field configuration itself, and the associated helicity of the late time configuration.

More about Gr@v at: gravitation.web.ua.pt

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