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## 3D magnetothermal evolution of neutron stars with the new finite volume code MATINS

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The study of the thermal and magnetic evolution of neutron stars in time is fundamental to understand the spectral and temporal properties of these sources, shed light on the origin of the different neutron star populations, and constraining the dense matter equation of state. To this aim, a numerical study of the heat diffusion and magnetic evolution equation is required, coupled with a detailed calculation of the microphysical property of the star, such as neutrino emissivity and heat and electric conductivity. Moreover, in order to account for non-axisymmetric effects, which are expected to lead to the formation of a non axisymmetric temperature distribution on the stellar surface, a solution of the equation in 3D is required. In this talk, I present our new code, MATINS, which aims to solve the magneto-thermal evolution of neutron star in 3D incorporating the most detailed microphysical description currently available.

**Primary author:** Dr ASCENZI, Stefano (GSSI)**Presenter:** Dr ASCENZI, Stefano (GSSI)**Session Classification:** MultiMessenger**Track Classification:** MultiMessenger