

## Deformation of compact objects due to the magnetic field

Magnetic fields are present in compact objects affecting its structure. The anisotropy produced by the magnetic field in the pressures suggests the necessity of using structure equations considering the axial symmetry of the magnetized system. In this work, we propose a model that generalizes the Tolman-Oppenheimer-Volkoff equations for the magnetized case and discuss some preliminary results. Our calculations are based on the  $\gamma$ -metrics where the parameter  $\gamma$  relates the deformation with the anisotropy in the pressures.

### arXiv

arXiv:1807.09943v2

**Authors:** ALVEAR TERRERO, Diana (ICIMAF); Dr PEREZ MARTINEZ, Aurora (ICIMAF); Dr MANREZA PARET, Daryel (Facultad de Física Universidad de la Habana); QUINTERO ANGULO, Gretel (Facultad de Física Universidad de la Habana); Dr HERNANDEZ MEDEROS, Victoria (ICIMAF); LOPEZ PEREZ, Samantha (Facultad de Física/ICIMAF)

**Presenter:** Dr PEREZ MARTINEZ, Aurora (ICIMAF)

**Session Classification:** Parallel Talks A

**Track Classification:** Dark Matter and Astroparticles