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Magnetized BEC stars at finite temperature

We study magnetic field and temperature effects on the Equations of State (EoS) and the structure of a compact object composed by a gas of interacting spin one bosons formed up by the pairing of two neutrons. We have considered independently that particle-magnetic field and particle-particle interactions. The magnetic field provokes anisotropic equation of the state so it is not valid any more Tolman–Oppenheimer–Volkoff (TOV) equation for to obtain mass and radius relation. So, we have used the recently found ɣ-structure equations that describe axially symmetric objects provided they are spheroidal and have obtained some results related to the deformation of the object due to the presence of the magnetic field.

arXiv

D. A. Terrero, V. H. Mederos, S. L. P´erez, D. M. Paret, A. P´erez Mart´ınez and G. Q. Angulo, arXiv:1807.09943 [astro-ph.HE].

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