

Observables of spheroidal magnetized strange stars

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We study stable spheroidal configurations of magnetized strange stars using an axially symmetric metric in spherical coordinates that uses a gamma parameter to link the anisotropy in the equation of state due to the magnetic field with the deformation of the star. The stars are composed by magnetized Strange Quark Matter described within the framework of the MIT-bag model. Their masses, radii, eccentricity, redshift and mass quadrupole moment are computed. Results are compared with spherical Strange Stars solutions obtained with TOV equations and observational data of Strange Stars candidates. In the spheroidal model the observables depend directly on the deformation of the stars, and even though it is small, the observables strongly deviate from the corresponding spherical configurations. Thus, the highest values of the mass quadrupole moment correspond to the intermediate mass regime. These differences might allow to discriminate between models with/without magnetic field when compared with observations.

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