

Magnetized Strange Stars versus Magnetized BEC stars

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We study the spheroidal magnetized Quark and Bose–Einstein Condensate (BEC) Stars. The former are supposed composed by strange quark matter while the later by the pairing of two-neutrons forming an interacting spin-one bosons. We calculate the equation of states (EoS) of the magnetized strange stars matter using Bag model while the corresponding EoS for magnetized BEC stars are doing considering the particle-magnetic field interaction and particle-particle interaction as two independent quantities. For Strange Stars we study first the stability of strange quark matter and we get stable configurations of the corresponding Strange Stars. Self-magnetized BEC may be possible so it allows to get inner magnetic field profiles of the stars as a function of the equatorial radii. The values obtained for the core and surface magnetic fields are in agreement with those typically found in compact objects.

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