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## Anisotropic Quark Stars with an Interacting Quark Equation of State

A deep exploration of the parameter space that relates the interacting equation of state with the bag constant B, and the interaction parameter a, is fundamental for the construction of diverse models of quark stars. In particular, the anisotropy of quark stars with a well motivated quantum chromodynamics (QCD) equation of state is presented here. The contribution of the fourth order corrections parameter (a4) of the QCD perturbation on the radial and tangential pressure generate significant effects on the mass-radius relation and the stability of the quark star. An adequate set of solutions for several values of the bag factor and the interaction parameter are used in order to calculate the relation between the mass, radius, density, compactness, and consequently the maximum masses and the stability. Therefore, while the more interactive quark solution lead to higher masses, the weak interaction among quarks give solutions similar to the widely known MIT bag model.

Author: Dr LORA CLAVIJO, Fabio Duvan (Universidad Industrial de Santander)

**Co-authors:** Dr MOJICA , Sindy (Universidad Industrial de Santander); Mr BECERRA, Eduar (Universidad Industrial de Santander); Dr CRUZ, Alejandro (Universitat de Valencia)

Presenter: Dr LORA CLAVIJO, Fabio Duvan (Universidad Industrial de Santander)

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