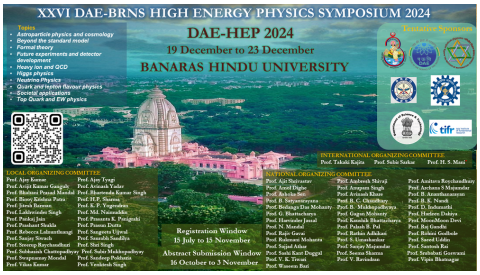

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Non-Radial Oscillations of Dark Matter Admixed Strange Quark Stars

We investigate the non-radial fundamental f-mode oscillations of dark matter (DM) admixed strange quark stars (DMSQSs) using an equation of state (EoS) that accounts for feebly interacting DM in strange quark stars (SQSs). By varying EoS parameters, we examine the structural properties (mass, radius, and tidal deformability) of DMSQSs in light of astrophysical constraints. Our analysis reveals the impact of DM on f-mode spectra within the Cowling approximation, yielding frequencies as a function of mass, compactness, and star composition. Notably, this study pioneers the examination of non-radial f-mode oscillations in DMSQSs. We also obtain that the mass-scaled angular frequency of DMSQSs varies universally with the compactness.

Field of contribution

Theory

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