Anisotropic quark stars in $f(R) = R^{1+\epsilon}$ gravity Workshop on Classical Gravity and Applications

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Within the metric formalism of f(R) theories of gravity, where R is the Ricci scalar, we study the hydrostatic equilibrium structure of compact stars with the inclusion of anisotropic pressure. In particular, we focus on the $f(R) = R^{1+\epsilon}$ model and we examine small deviations from General Relativity (GR) for $|\epsilon| \ll 1$. We find that both the mass and the radius of a compact star are larger with respect to the general relativistic counterpart. Furthermore, we remark that the substantial changes due to anisotropy occur mainly in the high-central-density region.

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