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# Masquerading hybrid stars with dark matter

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We investigate the influence of dark matter on hybrid stars. Using a two-fluid approach, where normal and dark matter components interact only gravitationally, we explore how dark matter can trigger the appearance of quark matter in neutron stars for unprecedented low masses. Our findings reveal that dark matter increases the central pressure of neutron stars, potentially leading to the formation of hybrid stars with quark cores even at very low compact star masses. The critical mass for the appearance of quark matter decreases with increasing dark matter content. We introduce the concept of "masquerading hybrid stars", where dark matter admixed stars exhibit similar mass-radius relations to purely hadronic stars, making it challenging to distinguish between them based solely on these parameters. Additionally, we identify a unique class of objects termed "dark oysters", characterized by a large dark matter halo and a small normal matter core, highlighting the diverse structural possibilities for compact stars influenced by dark matter.

## Altas energias

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