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Radial oscillations of relativistic compact stars

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We investigate the dark matter impact on properties of strange quark stars, such as mass-to-radius profiles and oscillation radial modes. The dark matter particle may be a boson or a fermion. First, in the two-fluid formalism we integrate the structure equations to obtain the interior solution. Next, this solution is plugged into the equations for the perturbations to obtain the frequency radial modes and the corresponding eigenfunctions. The large separation, a good observational signature, is also computed. Author will discuss radial oscillations of neutron stars with an accurate equation-of-state without dark matter.

Recent Publications:

1. G Panotopoulos and A Rincon () Charged slowly rotating toroidal black holes in the (1+3)-dimensional Einstein-power-Maxwell theory. International Journal of Modern Physics D DOI:10.1142/S0218271819500160.
2. A Rincon, E Contreras, P Barqueno, B Koch and G Panotopoulos (2018) Scale-dependent (2+1) - dimensional electrically charged black holes in Einstein-power-Maxwell theory. European Physical Journal DOI: 10.1140/epjc/s10052-018-6106-4.
3. G Panotopoulos (2018) Electromagnetic quasinormal modes of the nearly-extremal higher-dimensional Schwarzschild-de sitter black hole. Modern Physics Letters A 33(22):1850130.
4. G Panotopoulos (2018) Quasinormal modes of the BTZ black hole under scalar perturbations with a non-minimal coupling: exact spectrum. General Relativity and Gravitation DOI: 10.1007/s10714-018-2381-5.
5. G Panotopoulos and A Rincon (2018) Growth index and statefinder diagnostic of oscillating dark energy. Physical Review DOI: 10.1103/PhysRevD.97.103509.

Biography

Grigorios Panotopoulos working as Post-Doc FCT in CENTRA-Técnico, Portugal.

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