

## JOSÉ DOMINGO ARBAÑIL VELA

Investigador CONCYTEC, Código Renacyt: P0047030, Nivel II. Cuento con doctorado en física y me especializo en el área de Gravitación. Poseo un postdoctorado en astrofísica, realizado en el Instituto Tecnológico de Aeronáutica-Brasil. Cuento con casi veinte años de experiencia profesional de labor como docente y como investigador en diversos proyectos. Soy revisor por pares en revistas internacionales. Mi Scopus Author ID es 55912257400 y mi H\_index es 13.

### Artículos científicos indexados en Scopus

1. Quartuccio, Jonathan T., Moraes, Pedro H. R. S., **Arbañil, José D. V.**, "Deformed compact objects", International Journal of Theoretical Physics, 64, 23 (2025). DOI: [10.1007/s10773-025-05890-1](https://doi.org/10.1007/s10773-025-05890-1)
2. Nunes, Silvia P., **Arbañil, José D. V.**, Lenzi, César H., Coelho, Jaziel G., "Exploring temperature on gravitational wave production in binary white dwarfs", Journal of High Energy Astrophysics, 45, 333 (2025). DOI: [10.1016/J.JHEAP.2025.01.004](https://doi.org/10.1016/J.JHEAP.2025.01.004)
3. Pretel, Juan M. Z., Jorás, Sergio E., Reis, Ribamar R. R., Duarte, Sergio B. **Arbañil, José D. V.**, "Compact star in scalar-tensor theories with a single-well potential and the corresponding f(R) theory", Physics of the Dark Universe, 43, 101394 (2024). DOI: [10.1016/J.DARK.2023.101394](https://doi.org/10.1016/J.DARK.2023.101394)
4. Flores, Cesar V., Lenzi, César H., Dutra, Mariana, Lorencó, Odilon, **Arbañil, José D. V.**, "Gravitational wave asteroseismology of dark matter hadronic stars", Physical Review D, 109, 083021 (2024). DOI: [10.1103/PHYSREVD.109.083021](https://doi.org/10.1103/PHYSREVD.109.083021)
5. Pretel, Juan M. Z. Duarte, Sergio B., **Arbañil, José D. V.**, Dutra, Mariana, Lorencó, Odilon, "Dark energy effects on realistic neutron stars", Physical Review D, 110, 124019 (2024). DOI: [10.1103/PHYSREVD.110.124019](https://doi.org/10.1103/PHYSREVD.110.124019)
6. **Arbañil, José D. V.**, Lenzi, César H., Pretel, Juan M. Z., Flores, Cesar V., "Gravitational wave asteroseismology of charged strange stars in the Cowling approximation: the fluid pulsation modes", European Physical Journal C, 84, 1038 (2024). DOI: [10.1140/EPJC/S10052-024-13385-2](https://doi.org/10.1140/EPJC/S10052-024-13385-2)
7. **Arbañil, José D. V.**, Flores, Cesar V., Lenzi, César H., Pretel, Juan M. Z. "Fluid pulsation modes and tidal deformability of anisotropic strange stars in light of the GW170817 event", Physical Review D, 107, 124016 (2023). DOI: [10.1103/PHYSREVD.107.124016](https://doi.org/10.1103/PHYSREVD.107.124016)
8. **Arbañil, José D. V.**, Rodrigues, Lucas S. and Lenzi, César H., "Phase transition and stiffer core fluid in neutron stars: effects on stellar configurations, dynamical stability, and tidal deformability", European Physical Journal C, 83 (2023) 21. DOI: [10.1140/EPJC/S10052-023-11350-Z](https://doi.org/10.1140/EPJC/S10052-023-11350-Z)
9. **Arbañil, José D. V.** and Panotopoulos, Grigoris, "Tidal deformability and radial oscillations of anisotropic polytropic spheres", Physical Review D, 105 (2022) 024008. DOI: [10.1103/PhysRevD.105.024008](https://doi.org/10.1103/PhysRevD.105.024008)
10. Pretel, Juan M.Z. , **Arbañil, José D.V.**, Duarte, Sergio B., Jorás, Sergio E. and Reis, Ribamar R.R., "Charged quark stars in metric f(R) gravity", Journal of Cosmology and Astroparticle Physics, 2022 (2022) 058. DOI: [10.1088/1475-7516/2022/09/058](https://doi.org/10.1088/1475-7516/2022/09/058)
11. **Arbañil, José D. V.**, Lenzi, César H, and Malheiro Manuel, "Nonradial oscillation of strange stars in d dimensions", Journal of Physics: Conference Series, 2372 (2022) 012003. DOI: [10.1088/1742-6596/2372/1/012003](https://doi.org/10.1088/1742-6596/2372/1/012003)
12. Pretel, Juan M. Z., Jorás, Sergio E., Reis, Ribamar R.R., and **Arbañil, José D. V.**, "Radial oscillations and stability of compact stars in f(R,T)=R+2βT gravity", Journal of Cosmology and Astroparticle Physics, 2021 (2021) 064. DOI: [10.1088/1475-7516/2021/04/064](https://doi.org/10.1088/1475-7516/2021/04/064)

13. Pretel, Juan M. Z., Jorás Sergio E., Reis, Ribamar R.R., and **Arbañil, José D. V.**, "Neutron stars in  $f(R,T)$  gravity with conserved energy-momentum tensor: Hydrostatic equilibrium and asteroseismology", *Journal of Cosmology and Astroparticle Physics*, 2021 (2021) 055. DOI: [10.1088/1475-7516/2021/08/055](https://doi.org/10.1088/1475-7516/2021/08/055)
14. Nunes, Silvia O., **Arbañil, José D. V.**, and Malheiro, Manuel, "The structure and stability of massive hot White dwarfs", *The Astrophysical Journal*, 921 (2021) 138. DOI: [10.3847/1538-4357/ac1e8a](https://doi.org/10.3847/1538-4357/ac1e8a)
15. **Arbañil, José D.V.**, Lenzi, César H., Malheiro, Manuel, "Fluid pulsation modes from strange stars in a higher-dimensional spacetime", *Physical Review D*, 102 (2020) 084014. DOI: [10.1103/PhysRevD.102.084014](https://doi.org/10.1103/PhysRevD.102.084014)
16. **Arbañil, José D.V.**, Moraes, Pedro H.R.S., "Stable relativistic polytropic objects with cosmological constant", *European Physical Journal Plus*, 135 (2020) 354. DOI: [10.1140/EPJP/S13360-020-00368-X](https://doi.org/10.1140/EPJP/S13360-020-00368-X)
17. **Arbañil, José D.V.**, Malheiro, Manuel, "Radial pulsation of a compact object in  $d$  dimensions", *Journal of Physics: Conference Series*, 1558 (2020) 012003. DOI: [10.1088/1742-6596/1558/1/012003](https://doi.org/10.1088/1742-6596/1558/1/012003)
18. **Arbañil, José D.V.**, Moraes, Pedro H.R.S., Malheiro, Manuel, "Gravastar model in Randall-Sundrum braneworld", *Classical and Quantum Gravity*, 36, 235012 (2019). DOI: [10.1088/1361-6382/ab47d6](https://doi.org/10.1088/1361-6382/ab47d6)
19. **Arbañil, José D.V.**; Carvalho, Geanderson A.; Lobato, Ronaldo V.; Marinho Jr., Rubens M.; Malheiro, Manuel "Extra dimensions' influence on the equilibrium and radial stability of strange quark star" *Physical Review D* 100, 024035 (2019). DOI: [10.1103/PhysRevD.100.024035](https://doi.org/10.1103/PhysRevD.100.024035)
20. Carvalho, Geanderson A.; **Arbañil, José D.V.**; Marinho Jr., Rubens M.; Malheiro, Manuel "White dwarfs with a surface electrical charge distribution: Equilibrium and stability" *The European Physical Journal C* 78, 411 (2018). DOI: [10.1140/epjc/s10052-018-5901-2](https://doi.org/10.1140/epjc/s10052-018-5901-2)
21. **Arbañil, José D. V.** and Zanchin, Vilson T. "Relativistic polytropic spheres with electric charge: Compact stars, compactness and mass bounds, and quasiblack hole configurations" *Physical Review D* 97, 104045 (2018). DOI: [10.1103/PhysRevD.97.104045](https://doi.org/10.1103/PhysRevD.97.104045)
22. Carvalho, Geanderson A.; Lobato, Ronaldo V.; Moraes, Pedro H.R.S.; **Arbañil, José D.V.**; Marinho Jr., Rubens M.; Otoniel, Edson; Malheiro, Manuel "Stellar equilibrium configurations of white dwarfs in the  $f(R,T)$  gravity" *The European Physical Journal C* 77, 871 (2017). DOI: [10.1140/epjc/s10052-017-5413-5](https://doi.org/10.1140/epjc/s10052-017-5413-5)
23. Lugones, German and **Arbañil, José D. V.** "Looking for extra dimensions in compact stars" *Journal of Physics: Conference Series* 861, 012002 (2017). DOI: <https://doi.org/10.1088/1742-6596/861/1/012002>
24. Lugones, German and **Arbañil, José D. V.** "Compact stars in the braneworld: a new branch of stellar configurations with arbitrarily large mass" *Physical Review D* 95, 064022 (2017). DOI: <https://doi.org/10.1103/PhysRevD.95.064022>
25. Moraes, Pedro H.R.S., **Arbañil, José D. V.** and Malheiro, Manuel "Stellar equilibrium configurations of compact stars in  $f(R,T)$  theory of gravity" *Journal of Cosmology and Astroparticle Physics* 2016, 005 (2016). DOI: <https://doi.org/10.1088/1475-7516/2016/06/005>
26. **Arbañil, José D. V.** and Malheiro, Manuel "Stability of anisotropic strange quark stars" *Journal of Cosmology and Astroparticle Physics* 2016, 012 (2016). DOI: <https://doi.org/10.1088/1475-7516/2016/11/012>
27. **Arbañil, José D. V.** and Malheiro, Manuel "Radial oscillations of charged strange stars" *Journal of Physics: Conference Series* 706, 052022 (2016). DOI: <https://doi.org/10.1088/1742-6596/706/5/052022>
28. Lugones, German and **Arbañil, José D. V.** "Compact stars on the brane: What could they reveal about extra dimensions?" *Astronomische Nachrichten (Print)* 336, 876 (2015). DOI: <http://dx.doi.org/10.1002/asna.201512241>

29. **Arbañil, José D. V.** and Malheiro, Manuel “Equilibrium and stability of charged strange quark stars” *Physical Review D* 92, 084009 (2015). **DOI:** <https://doi.org/10.1103/PhysRevD.92.084009>
30. **Arbañil, José D. V.**, Lemos, José P. S. and Zanchin, Vilson T. “Incompressible relativistic spheres: Electrically charged stars, compactness bounds, and quasiblack hole configurations” *Physical Review D* 89, 104054 (2014). **DOI:** <https://doi.org/10.1103/PhysRevD.89.104054>
31. **Arbañil, José D. V.**, Lemos, José P. S. and Zanchin, Vilson T. “Polytropic spheres with electric charge: Compact stars, the Oppenheimer-Volkoff and Buchdahl limits, and quasiblack holes” *Physical Review D*, 88, 084023 (2013). **DOI:** <https://doi.org/10.1103/PhysRevD.88.084023>

#### **Trabajos completos publicados en actas de congresos**

1. **Arbañil, José D. V.** and Malheiro, Manuel “Stability of charged strange quark stars”. *AIP Conference Proceedings (Online)* 1693, 030007 (2015). **DOI:** <http://dx.doi.org/10.1063/1.4937190>
2. **Arbañil, José D. V.**, Zanchin, Vilson T. and Lemos, José P. S. “Charged polytropic stars and quasiblack holes”, *Proceedings of the 13th Marcel Grossmann Meeting: on recent developments in theoretical and experimental general relativity, astrophysics and relativistic field theories*, 1189, (2015). **DOI:** [http://dx.doi.org/10.1142/9789814623995\\_0118](http://dx.doi.org/10.1142/9789814623995_0118)
3. **Arbañil, José D. V.** and Zanchin, Vilson T. “The structure of charge d-dimensional stars: comparing different equations of state”, *Proceedings of the Fifth International School on Field Theory and Gravitation. Proceedings of Science, Pos (ISFTG) 033*, 2009. **WEB:** [https://pos.sissa.it/archive/conferences/081/033/ISFTG\\_033.pdf](https://pos.sissa.it/archive/conferences/081/033/ISFTG_033.pdf)

#### **Resúmenes publicados en actas de congresos**

1. **Arbañil, José D. V.** and Malheiro, Manuel “Equilibrium and stability of strange anisotropic stars” *Proceedings of the 14th Marcel Grossmann Meeting: on recent developments in theoretical and experimental general relativity, astrophysics and relativistic field theories*, 1571, (2018). **DOI:** [https://doi.org/10.1142/9789813226609\\_0148](https://doi.org/10.1142/9789813226609_0148)