Contribution ID: **90** Type: **Poster**

Astrophysical tests of modified gravity

The big open questions we still have currently in the fields of gravitation and cosmology, such as the dark matter and dark energy problems, among other reasons, have led to the development of many modified theories of gravity. These theories need to be tested in various scenarios to see whether they solve the problems they try to solve. Neutron stars are one of the best astrophysical candidates for testing the strong field regime of gravity, where there is expectation that deviations from General Relativity could be observed. Nowadays, a scenario still little explored are the tests of modified gravity for neutron stars that are rapidly rotating. Therefore, we studied neutron stars, with realistic equations of state, in the context of rapidly rotation in the $f(R,T)$ modified theory of gravity. Using an iterative numerical method, we obtained solutions for these systems, and physical quantities of interest, such as mass-radius relations and moment of inertia, were calculated and analysed. As a result, we found significant deviations in the physical quantities studied when comparing the General Relativity with the $f(R,T)$ case.

Author: M. DA SILVA, Franciele (Universidade Federal do Espírito Santo)

Co-authors: C. N. DOS SANTOS, Luis (Universidade Federal da Paraíba); E. MOTA, Clésio (Universidade Federal de Santa Catarina); O. F. DA COSTA, Túlio (Universidade Federal do Espírito Santo); C. FABRIS, Julio (Universidade Federal do Espírito Santo)

Presenter: M. DA SILVA, Franciele (Universidade Federal do Espírito Santo)

Session Classification: Poster session