Contribution ID: **138** Type: **Poster**

Pseudo-complex general relativity and the slow-rotation approximation for neutron stars

Pseudo-complex General Relativity is an algebraic extension of the standard theory of gravitation that relies on pseudo-complex numbers in order to get new metric degrees of freedom. The pseudo-complex formalism has an extra contribution to the Einstein equations with a repulsive character that has been called *dark energy*. This dark energy is relevant only when intense gravitational fields are present, therefore neutron stars are an interesting environment to test predictions. Since all neutron stars rotate, it follows that a complete account of the implications of Pseudo-complex General Relativity for compact stars should discuss rotation. In this work we analyze the impact of the pseudo-complex formalism in different physical quantities using the slow-rotation approximation for relativistic stars.

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