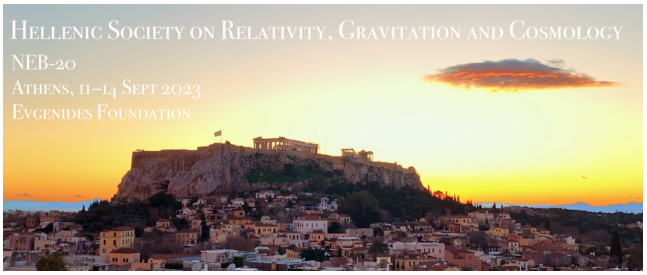

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Neutron star scalarization with Gauss-Bonnet and Ricci scalar couplings

Monday, 11 September 2023 16:10 (20 minutes)

Spontaneous scalarization of neutron stars has been extensively studied in the Damour and Esposito-Farèse model, in which a scalar field couples to the Ricci scalar or, equivalently, to the trace of the energy-momentum tensor. However, scalarization of both black holes and neutron stars may also be triggered by a coupling of the scalar field to the Gauss-Bonnet invariant. The case of the Gauss-Bonnet coupling has also received a lot of attention lately, but the synergy of the Ricci and Gauss-Bonnet couplings has been overlooked for neutron stars. In this talk, I will show that combining both couplings has interesting effects on the properties of scalarized neutron stars, such as affecting their domain of existence or the amount of scalar charge they carry.

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