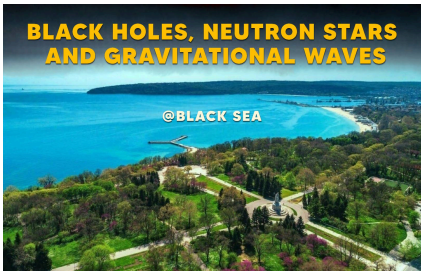

Contribution ID: **38** Type: **Oral presentation**

Binary neutron star mergers in massive scalar-tensor theory

Thursday 19 June 2025 15:30 (15 minutes)

We study binary neutron stars in the framework of Damour-Esposito-Farese-type (DEF) scalar-tensor theory of gravity with a massive scalar field. In this talk, I will start from the quasiequilibrium sequences of binary neutron stars, paying particular attention to the case where neutron stars are already spontaneously scalarized at distant orbits, i.e., in the high-coupling constant case. In particular, we are able to constrain the scalar mass from gravitational wave observations of binary neutron star mergers by inspecting the dephasing. Then, I will discuss the properties of post-merger remnants of binary neutron star mergers resulted by numerical relativity simulation and provide a distinctive signature in gravitational waves signal.

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