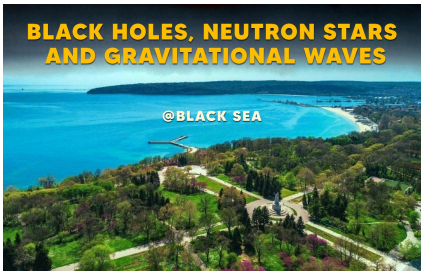

Contribution ID: **10** Type: **Oral presentation**

Towards a more realistic asteroseismology of core-collapse supernovae

Wednesday 18 June 2025 15:30 (15 minutes)

One of the most promising and challenging future gravitational wave (GW) sources are core-collapse supernovae. The oscillation modes of the newly born proto-neutron star (PNS) and the stalled accretion shock will be excited triggering the GW emission. Due to the stochastic nature of these signals, it is not possible to use template matching techniques. An alternative way to analyse the signal is to perform asteroseismology in order to infer properties of the PNS. The oscillations can be described by a system of partial differential equations (PDEs), which can be solved as an eigenvalue problem. In that frame, the eigenvalues are the characteristic frequencies of the oscillation modes. In this work, we relax the approximation of the hydrostatic equilibrium and allow for accretion of the PNS. By doing so, we can investigate the Standing Accretion Shock Instability and its effect on the modes.

Author: TSENEKLIDOU, Dimitra (University of Valencia)

Presenter: TSENEKLIDOU, Dimitra (University of Valencia)