

Phenomenology: From regular black holes to horizonless objects: gravitational perturbations and detectability

Monday, September 4, 2023 4:30 PM (15 minutes)

Black holes represents a break down of General Relativity because of the presence of the central singularity where the space-time is no more defined and the theory is no more predictive. There are two possible alternatives to black holes to describe the compact objects that we see in our Universe: regular black holes whose horizon hides a regular core and ultracompact horizonless objects. I will present an effective metric that interpolates between these two possibilities depending on the value of a regularization parameter. I will discuss gravitational perturbations of this solution, possible instabilities and deviations of the QNMs spectrum from that of singular black holes. Finally I will discuss the possible detectability of these deviations with the next generation of gravitational wave detectors.

Presenter: VELLUCCI, Vania (Sissa)

Session Classification: Parallel Sessions