Contribution ID: **103** Type: **talk**

10 years of Gravitational-Wave Tests of GR

Thursday 4 September 2025 11:00 (35 minutes)

Testing the relativistic strong-field dynamics of general relativity (GR) has been a major motivation in the century-long quest to detect gravitational waves (GWs). Since the first GW detection in 2015, we have been probing the dynamics of gravity and the nature of compact objects, by analysing the observed signals from coalescing black holes and neutron stars. In this talk, I will review the variety of tests that have been developed for this purpose and the constraints that they have placed on alternative scenarios to our standard GR model for compact binaries. I will also discuss the most promising directions and the most pressing challenges ahead as we continue probing fundamental physics with upcoming observations from the current generation of detectors at design sensitivity, as well as with the next generation of interferometers, on the ground and in space.

Primary author: Dr AGATHOS, Michalis (Queen Mary University of London)

Presenter: Dr AGATHOS, Michalis (Queen Mary University of London)

Session Classification: Morning