Contribution ID: **60** Type: **not specified**

PRIME Telescope Follow-Up of Gravitational Waves related emissions

Thursday, 5 March 2026 12:00 (15 minutes)

The merging of binary black hole (BBH) systems produces gravitational wave (GW) events. We can use their direct measurement of luminosity distance (dL) in combination with the redshift of the merging system to place cosmological constraints. BBH mergers are not expected to produce any electromagnetic counterpart; thus, to obtain the redshift of the source event, we rely on a statistical assignment of the host galaxy, provided by a catalog that covers the localization area. We follow up GW events using the PRIME telescope, a 1.8 m telescope located in Sutherland, South Africa. PRIME is a powerful instrument for GW follow-up, as it can observe large areas with few pointings, thanks to its wide ≈1.5 deg² field of view. Moreover, PRIME is one of the most sensitive near-infrared telescopes; thus, it is particularly well-suited for studying kilonovae and acquiring crucial photometric data for determining photometric redshifts. As a case study, we present follow-up observations of the BBH.

Presenter: Dr PASSALEVA, Niccolo' (Sapienza University of Rome)