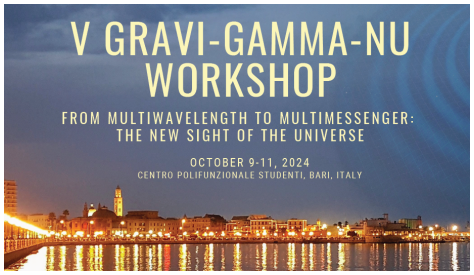

Contribution ID: **3** Type: **Contributed talk**

KM3NeT and the Multi-messenger Astrophysics

Wednesday, 9 October 2024 16:45 (15 minutes)

KM3NeT is a deep-sea telescope aimed at detecting neutrinos. It is composed of two instruments: ARCA and ORCA. ARCA is mainly aimed at searching for astrophysical sources of TeV-PeV neutrinos, while ORCA is mainly dedicated to the study of neutrino oscillations. Despite their different goals, both instruments can participate in a multi-messenger search by providing information about neutrinos in the GeV-PeV range.
Given KM3NeT's large field of view and almost 100% duty cycle, it is ideally suited to distribute alerts to other observatories and to perform follow-up searches on external triggers. KM3NeT's real-time multi-messenger search aims at reconstructing all neutrino events and searching for significant coincidences with alerts coming from other instruments (e.g. gravitational wave and gamma-ray detectors). Moreover, a real-time distribution of alerts in coincidence with detection of neutrinos of interest is under development. It will help in reducing the localization area of poorly-localised triggers, such as gravitational waves, and therefore it will increase the discovery potential to transient sources.
This contribution aims to provide a broad overview of the KM3NeT detector and its ongoing multi-messenger efforts.

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