

Second Gravi-Gamma Workshop



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Type: **Invited**

ENGRAVE/GRAWITA in the Multi-Messenger era.

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The search and study of the electromagnetic counterparts of gravitational wave signals requires the collaborative efforts of astrophysical researchers with different expertises and extending over the full range of the electromagnetic spectrum. This motivated the spontaneous constitution of GRAWITA, the GW INAF team, that, since the very beginning, was ready to react to alerts of LIGO-VIRGO interferometers. The successful story of the detection of the afterglow and kilonova after the binary NS merger GW170817 convinced even the skeptics of the exciting prospects of the new multi-messenger era.

However, the requirements of this new science are very demanding and therefore we prompted the constitution of the ENGRAVE international collaborations that has the goal to facilitate the access to top optical/infrared observing facilities and to guarantee an effective team organisation.

While waiting for the incoming new LIGO/VIRGO/KAGRA runs, I will describe the challenges that we have to address to meet the improved sensitivity of the GW interferometers. I will also summarise the ongoing attempts of the astronomical community to search for kilonovae regardless of the GW triggers.

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