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The GuRu (GRAWITA using Rubin) project: hunting for gravitational wave events counterparts and transients in the Vera Rubin Observatory (LSST) era inside the GRAWITA collaboration.

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The discovery of the binary neutron star merger GW170817 electromagnetic counterparts has opened the era of gravitational wave+electromagnetic (GW+EM) multi-messenger astronomy.
Exploiting this breakthrough requires increasing samples to explore the diversity of the GW electromagnetic counterparts behavior, provide tighter constraints on the Hubble constant, and test fundamental physics.
Rubin-LSST will play a key role in the newborn multi-messenger astronomy field allowing us to study and identify the likely faint and rapidly fading electromagnetic counterparts of the hundreds of gravitational wave (GW) events expected by the 2nd generation GW detectors network at full sensitivity. It will operate in synergy with other multi-wavelength facilities, available for our team GRAWITA expressly dedicated to this project.
In this talk, I will present the activities we carried out to optimize the response of the Italian GRAWITA network of facilities to expected GW triggers and how GRAWITA is working in the context of the search for GW counterparts with Rubin-LSST. All the activities I will describe are expected to provide means and opportunities to the Italian and European astronomical communities to have a leading role in the GW and Time Domain Astronomy.

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Session Classification: Multi-messenger science potential with future detectors and requirements for the future network for an optimal science exploitation