



ID de Contribution: 45

Type: **Oral presentation**

The hunt for GW counterparts with H.E.S.S. in the multi-messenger era.

vendredi 28 février 2020 13:45 (15 minutes)

The detection of the Gravitational Wave (GW) event GW170817 emanating from the coalescence of a binary neutron star alongside an associated short gamma ray burst triggered one of the largest multi-wavelength search campaigns in history. This led to the detection of several Electromagnetic (EM) counterparts in several bands. In fact, the combination of information provided by different astronomical messengers allows a better understanding of such cataclysmic events and phenomena in the Universe and nowadays, the hunt for counterparts of GW events is triggering increasing interest in the astrophysical communities. The High Energy Stereoscopic System (H.E.S.S.) is an experiment based in the Khomas highlands in Namibia dedicated to the detection of Very High Energy gamma rays. A large portion of the H.E.S.S. observing time is allocated to the follow-up of transient astronomical events with a special interest to GWs. Unlike other transients, GW event localizations cover large portions of the sky ranging from 10s to 1000s of degrees. This is why, in order to optimize coverage and increase the chances of counterpart detection, dedicated follow-up strategies are being developed. In this contribution, I report on the GW follow-up program in the H.E.S.S. collaboration focusing mainly on GW follow-up strategies. I also summarize the outcome of the H.E.S.S. observations during the LIGO/Virgo observing runs and discuss prospects with the future Cherenkov Telescope Array.

Field

Compact objects (supernovae, black holes, neutron stars)

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Classification de Session: Talk

Classification de thématique: Astrophysics