

Abstract Submitted
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Real-time search for coincidence of sub-threshold events between HAWC and LIGO-Virgo MONICA SEGLAR-ARROYO, Pennsylvania State Univ, HAWC COLLABORATION — The observation of several binary black hole mergers (BHM) and a neutron star merger (NSM) in the last two years by LIGO-Virgo set the beginning of gravitational wave astronomy. The detection of an electromagnetic signal by Fermi-GBM, temporally and spatially coincident with the gravitational wave coming from a NSM detected by LIGO-Virgo, stands as the first step to multi-messenger astronomy. It enabled a unprecedented follow-up campaign of the event that allowed the identification and monitoring of the source. Several of these events are expected in the next observation run of LIGO-Virgo, starting in Fall 2018. The HAWC experiment is a large field of view and large duty cycle observatory which is sensitive to very high energy gamma rays between 0.3-100TeV. These conditions, together with the LIGO-Virgo horizon for NSM, make HAWC a suitable instrument for the search of VHE signals from such events. In this contribution, we will discuss the exploitation of sub-threshold events and the enhancement of joint detection rates by using astrophysical distribution of galaxies in the next observation run O3.

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