Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Search for very-high-energy gamma-ray counterparts of gravitational waves with HAWC ISRAEL MARTINEZ-CASTELLANOS, Univ of Maryland-College Park, HAWC COLLABORATION — Recently the observation of gravitational waves consistent with a binary neutron star (BNS) coalescence was announced by the LIGO-Virgo collaboration, with spatial and temporal coincidence with a gamma-ray burst (GRB) detected by the Fermi Gamma-ray Burst Monitor. This was a milestone in multi-messenger astronomy, and provided strong evidence in favor of BNS mergers being progenitors of short gamma-ray bursts. The High-Altitude Water Cherenkov Observatory (HAWC) is a large field of view ($\sim$2sr) continuously operating observatory sensitive to very-high energy (VHE) gamma rays ($\sim$0.1-100TeV). These characteristics make it well suited for observing or constraining the VHE emission of this kind of rapid transients. Furthermore, the BNS horizon of LIGO-Virgo means that the attenuation on a possible VHE emission would be minimal, improving the sensitivity of HAWC significantly with respect to the average GRB. We report on our follow-up observations during the LIGO-Virgo runs O1 and O2, and describe the analysis developed in preparation for O3.

Israel Martinez-Castellanos
Univ of Maryland-College Park

Date submitted: 12 Jan 2018 Electronic form version 1.4