

Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Observing gamma-ray bursts with the scaler system of the HAWC Observatory DIRK LENNARZ, IGNACIO TABOADA, Georgia Institute of Technology, HAWC COLLABORATION — The origin and acceleration mechanisms of gamma-ray bursts (GRBs) are important questions in contemporary astrophysics. Several models are competing to explain the recent observations at higher energies (HE, above ~ 20 MeV). The detection and temporal evolution of GRB emission at the highest energies ($\gtrsim 10$ GeV) would have important implications for the GRB physics. The High Altitude Water Cherenkov (HAWC) observatory is a new very-high-energy (VHE, > 100 GeV) gamma-ray detector currently under construction at Sierra Negra in Mexico at an altitude of 4100 m above sea level. Unlike Imaging Atmospheric Cherenkov Telescopes, it has a large field of view and near 100% duty cycle that will allow for observations of the prompt GRB phase. HAWC has two data acquisition (DAQ) systems - one reading out full air-shower events (TDC-DAQ) and the other one counting the hits in each photomultiplier tube (scaler DAQ). GRB 130427A was the most energetic GRB so far detected at a redshift $z < 0.5$. It featured an unprecedented long high-energy emission and the most energetic photon so far detected from a GRB. In this contribution the results of the scaler analysis of GRB 130427A and other GRBs of interest are shown.

Dirk Lennarz
Georgia Institute of Technology

Date submitted: 10 Jan 2014

Electronic form version 1.4