

Abstract Submitted
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Muon data from a water Cherenkov detector prototype at Colorado State University MEGAN LONGO, MIGUEL MOSTAFA, Colorado State University, HIGH ALTITUDE WATER CHERENKOV (HAWC) OBSERVATORY COLLABORATION — The High Altitude Water Cherenkov (HAWC) Observatory is a very high energy gamma-ray experiment currently under construction in Sierra Negra in the state of Puebla, Mexico, at an altitude of 4,100 m a.s.l. The HAWC Observatory will consist of 300 water Cherenkov detectors (WCDs), each instrumented with three 8" photomultiplier tubes (PMTs) and one 10" high efficiency (HE) PMT. The PMTs are upward facing, anchored to the bottom of a 5 m deep by 7.3 m diameter steel tank, containing a multilayer hermetic plastic bag holding 200,000 L of purified water. The only full size WCD prototype outside of the HAWC site is located at Colorado State University (CSU) in Fort Collins, CO at an altitude of 1,525 m a.s.l. This prototype is instrumented with six 8" PMTs, one 10" HE PMT, and the same laser calibration system, electronics, and data acquisition system as the WCDs at the HAWC site. The CSU prototype is additionally equipped with scintillator paddles both under and above the volume of water, temperature probes (in the water, outside, and in the DAQ room), and one covered PMT. Preliminary results for muon rates and their temperature dependence using data collected with the CSU prototype will be presented.

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