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The water Cherenkov detectors of the HAWC Observatory 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 detector which is currently under construction at 4100 m in Sierra Negra, Mexico. The observatory will be composed of an array of 300 Water Cherenkov Detectors (WCDs). Each WCD consists of a 5 m tall by 7.3 m wide steel tank containing a hermetically sealed plastic bag, called a bladder, which is filled with 200,000 liters of purified water. The detectors are each equipped with four upward-facing photomultiplier tubes (PMTs), anchored to the bottom of the bladder. At Colorado State University (CSU) we have the only full-size prototype outside of the HAWC site. It serves as a testbed for installation and operation procedures for the HAWC observatory. The WCD at CSU has been fully operational since March 2011, and has several components not yet present at the HAWC site. In addition to the four HAWC position PMTs, our prototype has three additional PMTs, including one shrouded (dark) PMT. We also have five scintillator paddles, four buried underneath the HAWC position PMTs, and one freely moving paddle above the volume of water. These extra additions will allow us to work on muon reconstruction with a single WCD. We will describe the analysis being done with the data taken with the CSU prototype, its impact on the HAWC detector, and future plans for the prototype.

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