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HAWC the gamma ray observatory at sierra negra mexico

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Abstract content

Summary

With its wide field of view and sensitivity 15 times Milagros, HAWC will survey the TeV sky measuring Galactic sources beyond 100 TeV and searching half the sky each day for flaring sources. In this work we describe scientific observations that HAWC will make. In addition, history has shown that such an unpointed, continuously observing detector has the potential for unpredicted discoveries. HAWC is a water Cherenkov air-shower detector consisting of 300 large water tanks (7.3m diameter x 5m depth) each instrumented with a three 20 cm upward-looking photomultiplier tubes mounted on the bottom of the tank. The tanks will be densely packed to cover an area of ˜20,000 m2. The expanded detector area (˜10x that of the Milagro bottom layer), increased altitude (4100 m vs. 2630 m a.s.l.), and optical isolation of the detector elements lead to a 15-fold increase in sensitivity relative to Milagro, which performed the deepest wide-field survey of the TeV sky to date. We present also the results of the prototype phase.

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