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TeV Analysis of the Probable PWN Component of 3HWC J2031+415

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The Cygnus Cocoon region is a complex region containing an OB star cluster that is prominent in the TeV energy range. Located in this region is 3HWC J2031+415, a significant TeV gamma ray source whose emission is possibly associated with 2 components, the Cygnus OB2 star cluster and a pulsar wind nebula (PWN). In this work, several modelling methods are presented to best describe the emission. These models disentangle emission believed to be from the Cocoon and isolate the component emitted by the probable PWN. I will present several spectral models to describe the emission of the probable PWN using the latest data set from the High-Altitude Water Cherenkov (HAWC) observatory. Furthermore, I will present an energy morphology study of the PWN component of 3HWC J2031+415 in distinct energy bins.

Keywords

Gamma ray; Morphology study

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Subcategory

Experimental Results

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