Abstract Submitted
for the APR21 Meeting of
The American Physical Society

TeV Analysis of Probable PWN Component 3HWC J2031+415[1]

IAN HERZOG, Michigan Technological University — The Cygnus Cocoon region is a complex region containing an OB star cluster that is visible in the TeV energy range. Located in this region is 3HWC J2031+415, a significant TeV gamma ray source whose emission is probably 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 1523 days of data from the High-Altitude Water Cherenkov (HAWC) observatory. I will also present an energy morphology study of the PWN component of 3HWC J2031+415 in the 1 to 100 TeV energy range.

[1]Funded by Michigan Technological University

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Date submitted: 07 Jan 2021 Electronic form version 1.4