



Contribution ID: 97

Type: **Parallel Talk**

HAWC Observations of Gamma rays from the Quiescent Sun

Monday 8 August 2022 16:50 (20 minutes)

Galactic cosmic rays interact with the Sun's atmosphere to produce gamma rays via pion decay up to at least 100 GeV. The role of solar magnetic fields in modulating and enhancing the flux of these gamma rays is not completely understood, and can be further elucidated with a broadband spectrum extending into the TeV range. The HAWC observatory is a ground-based array of photo-detectors sensitive to cosmic rays and gamma-ray showers between 300 GeV and ~ 100 TeV. Using six years of data with an improved reconstruction and analysis, we present the results of a search for gamma rays from the Sun. Our work hints at a new component of high energy emission largely independent of the solar cycle.

Collaboration name

HAWC

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