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Techniques in HAWC Observatory for classification of the air showers

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One of the main challenges of the HAWC Observatory is to separate showers produced by gamma-rays from those produced by charged particles that represent almost 99.9% of the total particles arriving on Earth. HAWC applies a technique to distinguish them and to remove the most hadron-induced showers considered in the analysis. In this work, some techniques that have been applied to the HAWC data are described. One is the official that uses a simple cut on two parameters, and the other two techniques use machine learning. All these techniques are used and compared to observe three astrophysical sources (the Crab Nebula, and two blazars). We acknowledge the support from DGAPA PAPIIT IG101320.

Authors: CAPISTRÁN, Tomás (IA-UNAM); FAN, Kwok Lung (UMD); LINNEMANN, James Thomas (MSU); IBRAHIM, Torres (INAOE); SAZ PARKINSON, Pablo (The University of Hong Kong)

Co-author: HAWC COLLABORATION, for the (HAWC)

Presenter: CAPISTRÁN, Tomás (IA-UNAM)