Proton Spectrum with Magic Data

What is this contribution about?

We present a method to use Imaging Atmospheric Cherenkov Telescope (IACT) background data to extract the information about the spectra and composition of charged cosmic rays (CR). **The method does not require any assumption about the CR spectrum, nor additional observation time of the IACT.**

Why is it relevant / interesting?

During the last two decades IACTs collected tenths of billions of showers, which analysis could contribute to the study of the properties of galactic CR in energy range from 1 TeV to several PeV.

What have we done?

In presented analysis method we used artificial neural networks for the energy reconstruction and the discrimination of the cosmic protons from the other nuclei in the energy region from 1 TeV up to 500 TeV. The same method could be applied to find the spectra of other nuclei.

What is the result?

The obtained proton spectrum is in good agreement with the most modern CR experiments. It is stable in time and observation directions.