

# The expectation of cosmic ray proton and helium energy spectrum measured by LHAASO

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## Abstract content

Large High Altitude Air Shower Observation (LHAASO), located in Daocheng Haizishan, 4300m a.s.l., Sichuan Province, China, is under construction now and is expected to be completely operated by 2021. One of the main science objects of LHAASO is to precisely measure the cosmic rays energy spectrum of individual components from 1014 eV to 10<sup>18</sup> eV. LHAASO is consist of four types of detectors: the Water Cherenkov Detector Array (WCDA), the Wide Field-of-View Cherenkov Telescope Array (WFCTA), electromagnetic detector array with an effective area of 1 km<sup>2</sup> (KM2A-ED) and Muon detector array (KM2A-MD). In this work, several mass sensitive parameters measured by LHAASO hybrid detection are presented; and primary particle identification is carried out through TMVA analysis. The proton and a mixed proton and helium sample are selected with a purity of 90% and 95% respectively. Furthermore, the expected energy spectrum of light components of CRs is given.

**Primary author(s) :** Dr. YIN, Li.Qiao (IHEP, CAS)

**Co-author(s) :** Prof. ZHANG, Shou.Shan (IHEP, CAS); Prof. CAO, Zhen (IHEP,CAS); Prof. MA, Ling.Ling (IHEP, CAS); Dr. BI, Bai.Yang (IHEP, CAS)

**Presenter(s) :** Dr. YIN, Li.Qiao (IHEP, CAS)

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