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Study of the Lateral Distribution of EAS Thermal Neutrons Based on ENDA

Hadrons serve as the "skeleton" of Extensive Air Shower (EAS), carrying critical information about cosmic ray composition and energy. Electron-Neutron Detector Array (ENDA) is capable of detecting the electromagnetic components generated by EAS as well as the secondary thermal neutrons produced by hadrons. This report simulates the response of the ENDA detector and conducts an investigation into the lateral distribution of thermal neutrons using simulated data. By selecting various parameters, the fitting performance of different functional models for the thermal neutron's lateral distribution is evaluated. These findings provide a basis for optimizing the modeling approach for thermal neutron distributions.

Collaboration(s)

Authors: Ms LI, Fanping (Southwest Jiaotong University); Dr LIU, Hu (Southwest Jiaotong University)

Co-authors: CHEN, Tianlu; CUI, Shuwang (HEBEI NORMAL UNIVERSITY); DANZENGLUOBU; GAO, Wei (IHEP,CAS); GAO, Wenchao; GAO, Xinrui; GONG, Zi-ao; HU, Haibing; KULESHOV, Denis; KURINOV, Kirill; LI, Bingbing; LI, Jiaheng; LI, Yang; LIU, Maoyuan; LIU, Ye; MA, Xinhua; PAN, Xi-an; PENG, Dayu; QI, Yaohui; QU, Dong; SHCHEGOLEV, Oleg; STENKIN, Yuri; YANG, Tianshuang; YIN, Liqiao; ZHANG, Hengyu; ZHANG, Huiqian; ZHANG, Liangwei; ZHANG, Shiyuan

Presenter: GAO, Wei (IHEP,CAS)

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