

A PROFILE OF EHE GAMMA-RAY SHOWER AND ITS DETECTION BY THE TELESCOPE ARRAY

N. Inoue (1), K. Shinozaki (1) and M. Zha (2,3)

(1) Department of Physics, Saitama University, 255 Shimoohkubo, Urawa, Saitama 338-8570, Japan, (2) Institute for Cosmic Ray Research, University of Tokyo, Chiba 277-8582, Japan, (3) Laboratory of Cosmic Ray and High Energy Astrophysics, Institute of High Energy Physics, Academia Sinica, Beijing 100039, China.

The origin of EHE cosmic rays is most interesting problem and has been studied intensively by AGASA, HiRes and other giant air shower experiments. Especially, gamma-rays have been expected as an enhanced composition in EHE cosmic rays, from the acceleration theory of “top-down” scenario. The longitudinal development of gamma-ray initiated air shower has different features from the hadronic air shower because of the LPM effect and the geomagnetic cascading before entering the atmosphere. In this paper, characteristics of shower development of gamma-rays will be presented as compared with hadronic ones and the detection ability of gamma-ray showers by the planned Telescope Array experiment will be discussed.