

## **AUTOMATIC ANALYSIS OF EMULSION CHAMBERS USING IMAGE SCANNER**

**M. Shibata** (1), Y. Katayose (1), H. Kobayashi (1), N. Hotta (2), S. Ozawa (2), To. Saito (3), K. Izu (4) and S. Ayabe (5)

(1) Faculty of Engineering, Yokohama National University, Yokohama, Japan, (2) Faculty of Education, Utsunomiya University, Utsunomiya, Japan, (3) Tokyo Metropolitan College of Aeronautical Engineering, Tokyo, Japan, (4) Institute for Cosmic Ray Research, University of Tokyo, Kashiwa, Japan, (5) Department of Physics, Saitama University, Urawa, Japan.

`shibata@phys.ynu.ac.jp`

A new method of emulsion chamber analysis is developed using image scanner. We present the details of the new techniques and some results applied for Tibet hybrid experiment to study primary cosmic-ray composition around  $10^{15}$  eV by observing high energy gamma-families in coincident with air showers. Methods of background reduction, detection of electromagnetic cascade showers and energy determination in the emulsion chamber analysis will be presented in this paper. The results show that the image scanner can be used as a powerful tool for automatic analysis of emulsion chambers.