

HEAVY COMPONENT OF PRIMARY PARTICLES AROUND THE KNEE OBSERVED WITH THE TIBET BURST DETECTOR AND AIR SHOWER ARRAY

M. Amenomori (1), S. Ayabe (2), S.W. Cui (3), L.K. Ding (3), X.Y. Ding (4), C.F. Feng (5), Z.Y. Feng (6), Y. Fu (5), X.Y. Gao (7), Q.X. Geng (7), H.W. Guo (4), M. He (5), K. Hibino (8), N. Hotta (9), J. Huang (9), Q. Huang (6), A.X. Huo (3), K. Izu (10), H.Y. Jia (6), F. Kajino (11), K. Kasahara (12), Y. Katayose (13), K. Kawata (11), Labaciren (4), G.M. Le (14), J.Y. Li (5), H. Lu (3), S.L. Lu (3), G.X. Luo (3), X.R. Meng (4), K. Mizutani (2), J. Mu (7), H. Nanjo (1), M. Nishizawa (15), M. Ohnishi (10), I. Ohta (9), T. Ouchi (8), S. Ozawa (9), J.R. Ren (3), T. Saito (16), M. Sakata (11), T. Sasaki (17), M. Shibata (13), A. Shiomi (10), T. Shirai (8), H. Sugimoto (18), K. Taira (18), M. Takita (10), Y.H. Tan (3), N. Tateyama (8), S. Torii (8), S. Udo (2), T. Utsugi (2), C.R. Wang (5), H. Wang (3), X. Wang (5), X.W. Xu (3,10), L. Xu (5), X.C. Yang (7), Y. Yamamoto (11), Z.H. Ye (14), G.C. Yu (6), A.F. Yuan (4), **T. Yuda** (19), H.M. Zhang (3), J.L. Zhang (3), N.J. Zhang (5), X.Y. Zhang (5), Zhaxiciren (4) and Zhaxisangzhu (4)

(1) Dept. of Phys., Hirosaki Univ., Hirosaki, Japan, (2) Dept. of Phys., Saitama Univ., Urawa, Japan, (3) Cosmic Ray and HE Astrophys. Lab, IHEP, CAS, Beijing, China, (4) Dept. of Math. and Phys., Tibet Univ., Lhasa, China, (5) Dept. of Phys., Shangdong Univ., Jinan, China, (6) Inst. of Modern Phys., South West Jiaotong Univ., Chengdu, China, (7) Dept. of Phys., Yunnan Univ., Kunming, China, (8) Faculty of Eng., Kanagawa Univ., Yokohama, Japan, (9) Faculty of Ed., Utsunomiya Univ., Utsunomiya, Japan, (10) ICRC, Univ. of Tokyo, Kashiwa, Japan, (11) Dept. of Phys., Konan Univ., Kobe, Japan, (12) Faculty of Systems Eng., Shibaura Inst. of Technology, Omiya, Japan, (13) Dept. of Phys., Yokohama Natl. Univ., Yokohama, Japan, (14) Center of Space Sci. and Application Res., CAS, Beijing, China, (15) Natl. Inst. for Informatics, Tokyo, Japan, (16) Tokyo Metropolitan Coll. of Aeronautical Eng., Tokyo, Japan, (17) CCDL Lab, Waseda Univ., Tokyo, Japan, (18) Shonan Inst. of Technology, Fujisawa, Japan, (19) STEL, Nagoya Univ., Nagoya Japan.
yuda@stelab.nagoya-u.ac.jp

A hybrid experiment of the emulsion chamber, burst detector and air-shower array was done at Yangbajing (4300 m above sea level) in Tibet. From this experiment, we observed about 4300 burst events accompanied by air showers during 690 days of operation. Using an artificial neural network, we selected the burst events induced by protons, helium and heavy nuclei, and obtained their flux values in the energy region around the knee.