2/3 -154. 3/11/85

Spokesperson: Y. Tsuzuki
Kobe Univ.
Telephone: 078-881-1212
Ext. 6220
Telex: 5624089STKOBE J

A STUDY OF NUCLEAR INTERACTIONS OF 800 GeV PROTONS IN EMULSION

T. Abe, G. Fujioka, K. Fujiwara, H. Fukushima, H. Takahashi and K. Taruma
Department of Physics, Kobe University
Nada-ku, Kobe, Japan

T. Hara and Y. Tsuzuki
College of Liberal Arts, Kobe University
Nada-ku, Kobe, Japan

M. Teranaka
Faculty of Science, Osaka City University
Sumiyoshi-ku, Osaka, Japan

J. Yokota and H. Okabe
Science Education Institute of Osaka
Sumiyoshi-ku, Osaka, Japan

A STUDY OF NUCLEAR INTERACTIONS OF 800 GeV PROTONS IN NUCLEAR EMULSION

Objectives

1. Measurement of mean free path of 800 GeV protons in Emulsion.

2. Analysis of the inclusive shower-particle spectrum in pseudo-rapidity($= \ln \tan \frac{\theta}{2}$)

3. Analysis of the multiplicity distribution on secondary charged particles and checking the KNO scaling.

4. Investigation of the ratio of average multiplicity in proton-emulsion to that in proton-proton interactions at the same energy.

Instrument

An emulsion stack consists of 50 nuclear emulsion pellicles of size 10cm x 4cm x 0.06cm.

Total amount of nuclear emulsion is about 120 ml.

Conditions desired

The proton beam density of 5×10^4 protons $/cm^2$ is desired.

The beam energy is higher the better.