NAL PROPOSAL No. 242

Scientific Spokesman:

Kiyoshi Niu
Department of Physics
Nagoya University
Furo-cho, chikusa-ku
Nagoya 464, Japan

Study of Secondary Particles Produced by 300 GeV Protons in Emulsion Chambers

K. Niu
Nagoya University

September 25, 1973

NAL PROPOSAL (ECC-2)

Study of Secondary Particles Produced by 300 GeV Protons in Emulsion Chambers.

Spokesman

K.Niu

Department of Physics, Nagoya University.

OBJECTIVES

1. Calibration of relative scattering method for determination of momentum of charged particles.

2. The distribution of energy given to γ rays and the distribution of elasticity of collisions.

3. Search for short-lived particles as found by author in an emulsion chamber exposed to cosmic rays.

INSTRUMENTATION

Emulsion chambers consisting of nuclear emulsions and thin low Z materials as is shown in the figure. Each chamber has a size of 12cm x 9.5cm x 7cm.

Number of ECC exposed will be two.

BEAM INTENSITY AND EXPOSURE

The beam intensity shall be about $10^3 \sim 10^4$ protons/cm^2 since secondary particles, in particular γ rays developing into cascade showers, shall be measured separately from each other.

Exposure to the beam shall be vertical to the emulsion plane.