

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

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NAL PROPOSAL (ECC-2)

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

Spokesman

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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

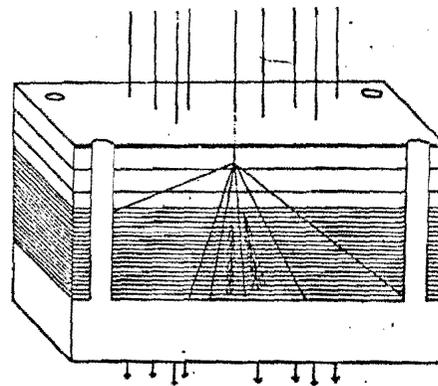
Emulsion chambers consisting of nuclear emulsions and thin low Z materials as is shown in the figure. Each chamber has a size of 12cm x 9.5cm x 7cm.

Number of ECC exposed will be two.

BEAM INTENSITY AND EXPOSURE

The beam intensity shall be about $10^3 \sim 10^4$ protons/cm² 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.



Producing layer
E.C.C.
Pb 1 mm thick x 20
Film based emulsion x 20
Base of meta-acrylic resin