

Transverse Momentum Measurement of Secondary Particles
in Proton-Emulsion Collisions at 800 GeV

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ABSTRACT

Momentum distribution of secondary particles at large angular region in proton-emulsion interactions is measured by using emulsion stack technics.

THE PURPOSE OF EXPERIMENT

It is argued that the baryon stopping power in nucleus is larger than the early estimation(1). In this regard, energies/transverse momenta of secondary particles from proton collision with heavy nucleus are expected to be larger than proton-proton collisions. The purpose of this experiment is to measure the transverse momenta of secondary particles at large angular region from proton-emulsion(Ag/Br) interactions by scattering angle measurement in nuclear emulsion stack. Angular distribution as well as multiplicity distribution of p-Em interactions can also be obtained.

We propose to expose emulsion stack to 800 GeV proton beam at Fermi laboratory.

DETECTOR

The detector is constituted of thick emulsions stacked with cross section area of $3 \times 2 \text{ cm}^2$ and depth 5 cm, with regard to beam direction.

REQUIRED EXPERIMENTAL CONDITIONS

- 1) Beam energy: mono-energetic proton beam of 800 GeV.
- 2) Amount of irradiation: $3 \times 10^4 / \text{cm}^2$ within an error of 50 per-cent.

REFERENCE

- 1) W.Busza, A.S.Goldhaber Phys. Lett. 139B(1984) 235.