NAL PROPOSAL No. 238

Scientific Spokesman:

J. J. Lord
Department of Physics
University of Washington
Seattle, Washington 98105

FTS/Comm: 206 - 543-2777 or 2770

EMULSION EXPOSURE TO 400 GeV PROTONS

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August 14, 1973

Dept. of Physics
University of Washington
Seattle, Wa. 98105

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Proposed Continuation and Extension at 400 GeV

Scientific Spokesman: J. J. Lord, Dept. of Physics
Telephone: 206 543-2777
543-2770

1. The first phase of our experiment #171 was carried out at 200 GeV in Sept. 1972. The purpose of the experiment was the search for new short-lived particles produced in nuclear collisions in emulsion.

2. We would like to extend our search for short-lived particles to 400 GeV in case there is a higher threshold energy for their production.

3. A side-line found during the 200 Gev experiment was the study of intranuclear cascades in proton-tungsten nuclear collisions. We would like to extend this to collisions with other nuclei from Z = 5 to Z = 90 in order to compare with the Independent Particle Model and the Coherent Particle Model theories of J.S. Trefil. A portion of this experiment could be carried out at 400 GeV.

4. The experiment can be carried out with 6 separate packets of plates each 2"x6" and 10" long.

5. An exposure of about 75,000 to 200,000 protons per square centimeter would be needed.

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