Spokesman: L.Voyvodic
Fermilab
X3170

Proposal for Studying Hadroproduction of Charmed Particles Using the 30-Inch Bubble Chamber

by

Cambridge-Duke-Fermilab-Michigan State-
Notre Dame-Stockholm Collaboration

May 5, 1980

Summary

We propose to test capabilities for observing decays of charmed particles, and studying their production mechanisms, using the 30-inch bubble chamber. In comparison with previous uses of this chamber, it is planned to operated with an order of magnitude improvement in track and vertex resolution, and an order of magnitude increase in beam intensity per picture. Such conditions are anticipated to allow direct studies on hadroproduction of ~ 10 charmed particles/hour using incident pions of $\geq$ 300 GeV. A test run of 100 hours is requested as soon as possible after the N3 beam and 30-inch chamber are again operational. We propose to use high resolution optics in two of the four cameras, and to operate the chamber at very low magnetic field ($\lesssim$ 10 Kilogauss, power demand < 1 Megawatt).

Fermilab

May 5, 1980

Dr. Leon Lederman
Director's Office

Dear Leon:

Attached is a summary of a proposed test of the capability for doing charm physics with hadrons and the 30 inch bubble chamber.

I hope you will regard this brief submission as a post deadline proposal for consideration by The Physics Advisory Committee at Aspen.

Participants in the proposed test run, which was discussed after your review of May 3, include many of the experimenters of E-597 (Whitmore), with an expected infusion of Fermilab experimenters which is now under discussion.

We would welcome the opportunity for oral presentation at the May 15 and 16 PAC meetings, by which time details of participants and the proposed test program would also be distributed.

Sincerely,

Louis Voyvodic

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