From: FNAL::KRIDER 8-MAY-1991 13:16:54.04
To: TAIJI,HOJVAT,APPEL,KRIDER
CC:
Subj: Pixel Detector Tests at NM

Dear Taiji,

The Pixel Detector Development Collaboration successfully completed preliminary studies of one hybrid detector last year in the BCD test area at Fermilab. Since that time the group has assembled a telescope consisting of three detectors of the same design to study tracking. In addition, it is anticipated that an upgraded version of the detector will be ready for testing in a few months. The group is requesting permission to conduct these tests during 1991 in the New Muon (NM) beam at Fermilab.

The main difficulties encountered during the 1990 BCD area tests were the inability to access the equipment frequently and a limited amount of running time. The 1991 beam testing program is more ambitious than last year's program, and is important to have easier access to the apparatus than was possible in the BCD test area. The NM area provides ready access to equipment as well as optimum beam characteristics.

The purpose of the tests is to study the properties of a prototype vertex tracking system employing silicon pixel detectors. Each hybrid detector consists of two silicon chips which are indium bump bonded together. One chip is a pixel array of PIN diodes for particle detection, and the other chip provides for multiplexed readout of the diode array. The efforts of the collaboration are directed toward the common requirements of E706, E781, SDC, BCD and other heavy flavor experiments.

Initially, a telescope consisting of three pixel detectors mounted on a pyrex optical bench will be installed in the beam for studies of tracking and time and spatial resolution. Later during the running period an upgraded version of the detector will be installed in the telescope to study smart pixel and sparse readout capabilities. The smart pixel design includes a system programmable comparator to set the threshold for particle hit discrimination on each pixel, and sparse readout permits reading out of only the hit pixels and their nearest neighbors.

Carlos Hojvat and I have already been discussing the possibility of conducting the tests at NM in a space upstream of T839. A draft of an MOU is now circulating among the collaboration. As soon as the draft is completed, we will send it to you.

Sincerely,
John Krider
For the Pixel Detector Development Collaboration

From: WARNER::HOJVAT "Carlos, at Fermilab (708) 840-4400" 17-MAY-1991 14:17:24.46
To: FNAL::TAIJI
CC: HOJVAT
Subj: Arens

Taiji,
Could you please give a T number to the Arens proposal (e-mail message from Krider). I think we can fit them in NM.
Thanks, Carlos.