BNL-103902-2014-TECH

AGS.SN21;BNL-103902-2014-IR

Beam Distribution Upstream of B Target

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May 1973

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U.S. Department of Energy

USDOE Office of Science (SC)

DISCLAIMER

No. 2-1 Blumberg

AGS Studies Report

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Fri., May 4, 1973
Scheduled: 11:30 - 12:30
Used: 12:30 - 1:00

Objectives:

1. Measure beam distribution upstream of B station for DAS.
2. Cross comparison of IPDIC Units downstream of B.
3. Calibration of beam intensity monitor (split plate sum) at B.
4. Calibration of ion chamber beam monitor at B prime target for Kreisler, Exp. #572.

Results:

All successful and in half the allotted time:

1. Autoradiographs of foils at B station and just upstream of the DAS site allow reconstruction of the beam distribution anywhere between.
2. IPDIC's in the same field have a relative calibration of 7.7 to 1.
3. The carbon-eleven reaction gave 7.8×10^{13} protons on B. The calibration of the split plate sum beam monitor is 3.6×10^{8} protons/count (R = 1 M, C = .003). The target used was a Be wire .050" dia. x 6" long. The telescope calibration is 8.6×10^{8} protons per count, but the autoradiograph showed the beam to be larger than the target diameter.
4. The same calibration procedure gave the B prime intensity 2.4×10^{12} protons for the same run. The ion chamber calibration is 13 ion pairs per proton (2.1×10^{-18} coulombs/proton).