UNIVERSITY OF CALIFORNIA

Radiation Laboratory

BERKELEY, CALIFORNIA

DISCLAIMER

For the Denver meeting of the
American Physical Society, June 25-27, 1964
Companion paper with Ankenbrandt et al.,
Production of Nucleon Isobars by 7-BeV/c Protons.

April 7, 1964

UCRL-11362 Abstract

Elastic Proton-Proton Scattering at 7, 5, and 3 BeV/c.* A. R. Clyde (introduced by Bruce Cork), Bruce Cork, D. Keefe, L. T. Kerth, W. M. Layson, and W. A. Wenzel, Lawrence Radiation Laboratory, Berkeley. --

We have measured the elastic proton-proton scattering cross section at incident momenta of 7, 5, and 3 BeV/c, and scattering angles from 3 to 90 deg c.m. For high-momentum transfer, a CH_2 target was used, and one, or in some cases both, scattered protons were detected by scintillation counters. The momentum interval for the scattered protons was selected by means of a 16 deg deflecting magnet, and magnetic quadrupoles were used to increase the effective solid angle. A similar system was used to detect protons scattered at nearly 180 deg c.m. from a hydrogen gas target. The observed cross section for high-momentum transfer is much larger than the value extrapolated from lower-momentum transfers if we assume a simple exponential law. Low-momentum-transfer measurements were made to approximately ± 1% statistical accuracy.

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*Work done under the auspices of the U. S. Atomic Energy Commission.

Abstract for APS Meeting-Denver, Colorado, June 25-27, 1964.