Lawrence Berkeley National Laboratory
Recent Work

Title
ELASTIC PROTON-PROTON SCATTERING AT 7, 5, AND 3 BeV/c

Permalink
https://escholarship.org/uc/item/80m185q6

Authors
Clyde, A.R.
Cork, Bruce
Keefe, D.
et al.

Publication Date
1964-04-07
DISCLAIMER

This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor the Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or the Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof or the Regents of the University of California.
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 CH₂ 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.

---

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