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The Attenuation Cross Sections of 37-Mev Pions in Hydrogen

by

C. E. Angell and J. P. Perry

Department of Physics

University of Rochester

Rochester, New York

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G. E. Angell and J. P. Perry

University of Rochester, Rochester, N.Y.

We previously reported¹ 16.0 ± 1.0 millibarns for the attenuation cross section of 37 Mev positive pions and 17.3 ± 1.4 millibarns for negative pions in hydrogen. In arriving at these numbers we overlooked an important correction² due to the $\pi^- \rightarrow \mu^-$ decays which occur between the second and third crystals of the telescope. Applying this correction and a further small correction due to a refinement in the calculation of our geometry, these numbers become $\sigma(\pi^+) = 11.8 \pm 1.0$ millibarns and $\sigma(\pi^-) = 12.9 \pm 1.7$ millibarns. The π^+ value agrees with that obtained from our measured angular distribution.³ The measurement of the π^- angular distribution at this energy is not yet completed.

(1) Angell and Perry, Phys. Rev. 90, 724 (1953).

(2) Leonard and Stork, Proc. Am. Physical Soc., Vol. 28, No. 4, P. 19 (1953).

(3) Perry and Angell, Phys. Rev. (to be published).