

Erratum: Test of Low-Energy Theorems for $^1\text{H}(\vec{\gamma}, \pi^0)^1\text{H}$ in the Threshold Region [Phys. Rev. Lett. 87, 232501 (2001)]

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(Received 11 November 2012; published 17 January 2013)

DOI: 10.1103/PhysRevLett.110.039903

PACS numbers: 25.20.Lj, 13.60.Le, 99.10.Cd

In the results published in our Letter, the contributions from carbon and oxygen in the Kapton target windows were taken into account for the cross sections but they were neglected in the determination of the polarized beam asymmetries Σ . The nuclei in the target windows have $J^\pi = 0^+$ and therefore an asymmetry of $\Sigma = 1$ for the coherent π^0 production that dominates in the threshold region. The contribution of the target-window contamination in each channel from threshold to 166 MeV is between 5% and 7% [1]. We therefore estimate the target-window contribution to the asymmetry to be 0.06 ± 0.01 in absolute units. Thus, the asymmetries should be corrected by subtracting $\approx 0.06 \pm 0.01$ from each datum. The published and corrected asymmetries are plotted in Fig. 1. The errors were increased by adding the 0.01 uncertainty in quadrature with the previously published values. The total and differential cross sections reported *were* corrected for the target-window contributions and thus remain valid. This correction to Σ does *not* change the values of the S -wave amplitude E_{0+} , the P -wave amplitude P_1 , or the P -wave combination P_{23} . It will, however, modify the individual extraction of the P_2 and P_3 amplitudes. This is shown in Table I.

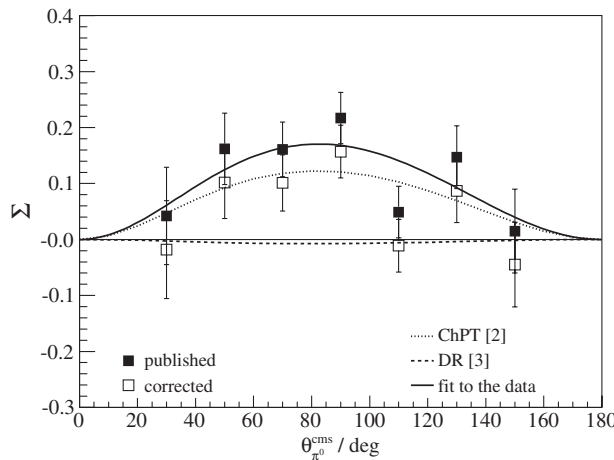


FIG. 1. Published (filled squares) and corrected asymmetries (open squares) for $E_\gamma = 159.5$ MeV as a function of pion center-of-mass angle. The solid line is a fit to the published data, the dotted line is a prediction of ChPT [2], and the dashed line is a DR calculation [3].

TABLE I. Results of the P -wave multipoles with statistical and systematic errors from a qk fit using Σ_{pub} and Σ_{cor} along with the original total and differential cross sections. Comparisons are made with predictions of ChPT [2] and a dispersion theoretical approach [3].^a

	Σ_{pub}	Σ_{cor}	ChPT	DR
P_1	$9.44 \pm 0.06 \pm 0.28$	$9.44 \pm 0.06 \pm 0.28$	9.14 ± 0.5	9.55
P_2	$-9.48 \pm 0.12 \pm 0.28$	$-9.90 \pm 0.12 \pm 0.28$	-9.7 ± 0.5	-10.37
P_3	$11.32 \pm 0.12 \pm 0.34$	$10.96 \pm 0.12 \pm 0.34$	10.36	9.27
P_{23}	10.45 ± 0.07	10.44 ± 0.07	11.07	9.84

^a P -wave combinations converted into the unit $q \times 10^{-3}/m_{\pi^+}^2$.

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[3] O. Hanstein, D. Drechsel, and L. Tiator, *Phys. Lett. B* **399**, 13 (1997).