

**Thiel *et al.* Reply:** The preceding comment by R. L. Workman *et al.* [1] to our Letter on the measurement of the double polarization observable  $G$  in  $\pi^0$  photoproduction [2] states that the agreement of the prediction by the SAID group to the newly measured observable is better than mentioned in our paper. They state that the newer solution CM12, instead of the prediction, SN11, which was used for comparison in Ref. [2], provides a better description to the new data. In the new solution a different method was used to describe the photoproduction data. A Chew-Mandelstam (CM) energy-dependent parametrization, as it was already used to the fit of the  $\pi N$  scattering and  $\eta N$  production data, has now been extended to include elec-

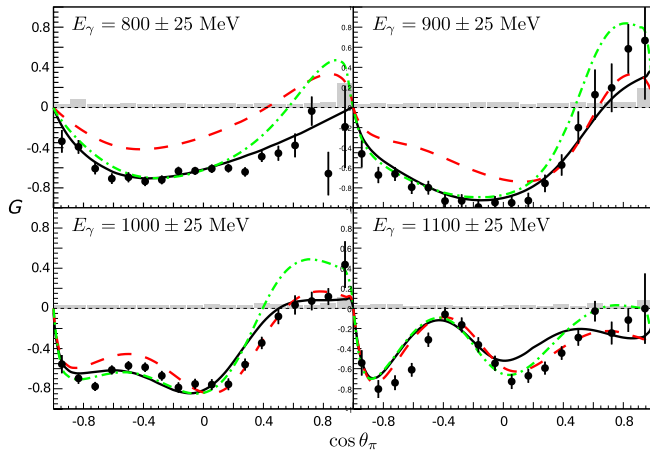


FIG. 1 (color online). The angular distribution of the double polarization observable  $G$  for four different energies [2] compared to the Bonn-Gatchina [5] (black solid line) and SAID [3] (SN11: red dashed line, CM12: green dashed-dotted line) solutions.

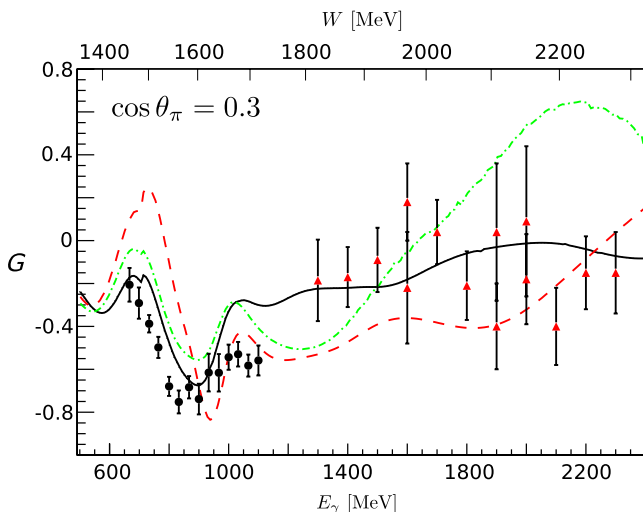


FIG. 2 (color online). The energy dependence of the Bonn-Gatchina [5] (black solid line) and SAID [3] (SN11: red dashed line, CM12: green dashed-dotted line) predictions for  $\cos\theta_\pi = 0.2$  and  $0.3$ . Data points from Thiel *et al.* [2] (black dots) and Bussey *et al.* [4] (red triangles).

tromagnetic channels [3]. This parametrization provides a better overall fit to the same database while having fewer free parameters.

In Fig. 1 we compare the new CM12 and the former SN11 solutions to the angular distributions of the double polarization observable  $G$  in four different energy bins. A big improvement can be seen, especially at 800 and 900 MeV. The new SAID prediction is now able to describe the data points over a wide angular range. An interesting feature appears, however, in the forward direction. For  $\cos\theta_\pi > 0.3$  the SAID parametrization now fails to describe the data points and the agreement gets worse with the new solution, CM12.

Additionally, the SAID solution, CM12, now gets worse in the description of the previous measurement of the polarization observable  $G$  [4] at higher energies (see Fig. 2). In the energy region above  $E_\gamma > 1500$  MeV, a positive signal of  $G$  is predicted, which cannot be seen in the previous measurement and did not occur in the former solution SN11.

We therefore conclude that the new SAID solution CM12 improves the predictions in certain angles, while its description of the data gets worse at the forward direction and for higher photon energies.

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