

AVAILABLE TWO-PHOTON EXCHANGE CALCULATIONS

- P.A.M. Guichon and M. Vanderhaeghen, hep-ph/0306007;
- A. Afanasev: Axial-vector dominance fit of 2-photon exchange;
- P.G.Blunden, W. Melnichouk and J.A. Tjon, nucl-th/0306076.

Q^2 (GeV/c) ²	0.61	2.10	3.50
$\Delta(A_T/A_L)/(A_T/A_L)$	4.3%	7.1%	10.7%
$\Delta A_{pr}/A_{pr}$	-0.2%	2.6%	3.0%
$\Delta(A_T/A_L)/(A_T/A_L)$	0.3%	0.8%	1.4%
$\Delta A_{pr}/A_{pr}$	8.9%	10.5%	6.8%

OUR CONCLUSION

- At the moment theories about the two photon exchange effect are not well developed yet and cannot give a consistent explanation of the data.
- The current understanding is that the correction to the elastic asymmetry is small, based on the same argument as the recoil polarization method as follows (W. Melnichouk):

“The size of the 2-gamma effects for asymmetry measurements is much smaller than in the Rosenbluth separation case. Our preliminary results for the polarization transfer corrections are very small. **As long as one is taking a ratio of cross sections, the epsilon dependence should cancel to a much larger extent than in the cross section itself.** I wouldn’t expect the different kinematical factors associated with the initial state polarization cf. the final state polarization to alter the qualitative conclusions about the cancellation of the epsilon dependence.”