Trinucleon Magnetic Form Factors

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The trinucleon magnetic form factors, given previously [1] by some of the present authors, are recalculated. The reason is that the underling current is presently used for describing inelastic e.m. processes in the three-nucleon system.

The trinucleon bound state is obtained from a coupled-channel two-baryon potential which allows for single Δ-isobar excitation [2]. The e.m. current consistent with that potential also couples nucleonic states and states with a Δ-isobar. One-baryon and two-baryon contributions to the e.m. current are taken into account. Results are displayed in the figure. Compared to Ref.[1], both nucleonic and delta currents are calculated within the framework of improved computational technique [3]. The results based on the coupled-channel potential with Δ-isobar excitation are shown as solid lines, whereas the results for the purely nucleonic reference potential are shown as dashed lines.

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2. S. Nemoto, K. Chmielewski, J. Haidenbauer, S. Oryu, P. U. Sauer and N. W. Schellingerhout, Few-Body Systems **24**, 213 (1998)
3. M. Oelsner, PhD Thesis, University Hannover, 2000