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Measurement of the neutral pion transition form factor at low Q2 at Jefferson Lab

The neutral pion transition form factor (TFF) plays an important role in tests of low energy QCD, and in the determination of the hadronic-light-by-light (HLbL) scattering contribution to the muon anomalous magnetic moment, (g-2). Several measurements of this form factor exist in the large space-like Q2region, but the low Q2space-like region remains largely unexplored. This talk will present the details and impact of the proposed precision measurement of the TFF to be carried out in Hall B of Jefferson Lab. This experiment will use a 10.5 GeV electron beam, silicon target, and a low background beamline in Hall B to measure the Primakoff crosssection for neutral pion electro-production. These data will be used to extract the pion TFF in the Q2range of 0.001-0.1 GeV2, and constrain calculations for the HLbL contribution to a muon (g-2) at low Q2. The author acknowledges support from D.O.E. grant DE-FG02-88ER40415

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