

C12-18-005: *Timelike Compton Scattering Off a Transversely Polarized Proton*

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The proposed experiment aims to provide time-like Compton scattering data from a transversely polarized proton target, which will be sensitive to various GPDs, and in particular to the poorly constrained GPD E . This proposal is an update to PR12-18-005 that was conditionally approved by PAC 46 in 2018. As was noted in the previous Theory report, a comparison of GPDs extracted from DVCS and from TCS will provide a test of GPD universality, since at leading twist and leading order the DVCS and TCS amplitudes are complex conjugates.

A interesting question to consider is, if differences between the GPDs from DVCS and TCS are observed, should these be interpreted as violations of universality, or presence of higher twists, or effects beyond the leading order in the strong coupling? Some consideration and strategy about the interpretation should be discussed.

Finally, note that the short name for the Thomas Jefferson National Accelerator Facility is “Jefferson Lab”, not “Jefferson Laboratory.”