Abstract Submitted for the DAMOP10 Meeting of The American Physical Society

**Optical Precursor Investigation in an Organic Dye Solution** MATTHEW SPRINGER, WENLONG YANG, ALEXEI SOKOLOV, GEORGE KATTAWAR, ALEXANDRE KOLOMENSKI, Texas A&M University — Recent interest in Sommerfeld-Brillouin optical precursors has brought attention to the possibility of optical precursor observation in bulk matter. We investigate the possible development of optical precursors in an organic dye solution with a sharp absorption resonance and anomalous dispersion at a wavelength of approximately 800nm. We explore this regime experimentally with femtosecond laser pulses of sub-10fs duration, measured by an autocorrelation technique after transmission through the dye. The observed experimental autocorrelation results are compared with computational simulations which indicate important dispersion effects in the shape of the propagated pulse, including precursor-like behavior in its time evolution.

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Date submitted: 25 Jan 2010

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