

Abstract Submitted  
for the DAMOP16 Meeting of  
The American Physical Society

**Characterization of Ultrafast Laser Pulses using a Low-dispersion Frequency Resolved Optical Grating Spectrometer<sup>1</sup>** HOPE WHITELOCK, MICHAEL BISHOP, SOROUSH KHOSRAVI, RAZIB OBAID, NORA BERRAH, Univ of Connecticut - Storrs — A low dispersion frequency-resolved optical gating (FROG) spectrometer was designed to characterize ultrashort (<50 femtosecond) laser pulses from a commercial regenerative amplifier, optical parametric amplifier, and a home-built non-colinear optical parametric amplifier. This instrument splits a laser pulse into two replicas with a 90:10 intensity ratio using a thin pellicle beam-splitter and then recombines the pulses in a birefringent medium. The instrument detects a wavelength-sensitive change in polarization of the weak probe pulse in the presence of the stronger pump pulse inside the birefringent medium. Scanning the time delay between the two pulses and acquiring spectra allows for characterization of the frequency and time content of ultrafast laser pulses, that is needed for interpretation of experimental results obtained from these ultrafast laser systems.

<sup>1</sup>Funded by the DoE-BES, grant No. DE-SC0012376

Hope Whitelock  
Univ of Connecticut - Storrs

Date submitted: 29 Jan 2016

Electronic form version 1.4