

Abstract Submitted
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Experimental Observations of High Intensity UV Femtosecond Laser Interactions with Clusters XIANGYANG SONG, Laboratory for X-Ray Microimaging and Bioinformatics, Department of Physics (m/c 273), University of Illinois at Chicago, Chicago, IL 60607, USA, XIANGYANG SONG TEAM, PING ZHANG TEAM, SHAHAB KHAN TEAM, JOHN C. MCCORKINDALE TEAM, KEITH BOYER TEAM — High-intensity, ultraviolet (248 nm), femtosecond (about 180 fs) laser radiation was focused into a gas jet to study the spectral shifts and phase modulations at intensities up to $10^{18} \text{W}/\text{cm}^2$. Forward-scattered laser spectra were measured using a spatially resolved spectrometer; the peak pulse intensity envelope and phase were measured by the FROG (frequency-resolved optical gating) technique. In Ar targets, it was found that the forward Raman spectrum was blue-shifted and its bandwidth moderately broadened. Pulse shortening and phase modulation were also observed.

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