

Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

Disintegration Symmetries of Non-Spherical Clusters in X Ray Laser Pulses EDWARD ACKAD, Southern Illinois University Edwardsville, JOSEPH TROST, UC Davis — Clusters tend to form an icosahedral structure with most of the atoms on the surface of the cluster. When irradiated with an ultra-intense short X Ray pulse, such as pulses from the new X Ray free laser sources, the dynamics of the ions is driven by the internal nanoplasma, not the laser as in IR pulses. We report on our findings that the cluster disintegrates with the same symmetry as the initial structure, even if the cluster is highly non-spherical. Thus a measurement of the ion signal's anisotropy could be used to know the initial orientation of a non-spherical object such as a protein being imaged using single-shot diffraction imaging at an X Ray free-electron laser facility (LCLS).

Edward Ackad
Southern Illinois University Edwardsville

Date submitted: 28 Jan 2014

Electronic form version 1.4