

Abstract Submitted
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**Simulation of the Generation of Low Frequency Radiation From
Argon Clusters Illuminated by High-Intensity Short Pulse Lasers** CLAY

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— The interaction of high-powered lasers with small plasma clusters is of interest due to its range of applications including the generation of fast ions and electrons for advanced accelerators, self-focusing phenomenon in optics, and production of x-ray and extreme ultraviolet (EUV) radiation. We simulate the interaction of high-intensity lasers with solid density clusters using the fully electromagnetic PIC code TurboWAVE². We analyze a range of cluster sizes, laser intensities, and pulse durations to investigate the dependence of low frequency radiation production on these parameters. In this poster, we illustrate the results of this study. In particular, we present calculations of the energy absorbed and released from the cluster, as well as an analysis of the far-field radiation distribution, intensity, and power spectrum. Finally, we present conclusions that may guide future simulations and experiments.

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