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Computational Modeling of the Radiation from Free Electrons in an Intense Laser Focus JAMES FLETCHER, MATT ASHBY, MICHAEL WARE, Brigham Young University- Provo — We report the result of a simulation of the light scattered by individual free electrons in an intense laser focus. We treat the laser as a classical light field and electrons as point particles initially bound in an atom-like potential. Then we crudely simulate the ionization process of helium in an intense focus and calculate the radiation patterns and intensity from free electrons born in this process. The classical model provides a benchmark for comparing the radiation we observe in our experiment where we are able to see the effect of the electron wavepacket size on the emitted radiation.

James Fletcher
Brigham Young University- Provo

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