

Abstract Submitted
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Dynamics of Solids Irradiated by UED beams¹ JULIO CANDANEDO, ASU — The remarkable success of the X-ray free-electron lasers (XFELs), and their ability to image biological macromolecules while minimizing secondary radiation damage due photoelectrons when using femtosecond pulses raises the question of whether this can also be achieved using pulsed Ultrafast Electron Diffraction (UED) beams. The limiting factor for both Cryo-EM and x-ray sources, e.g. XFEL, for imaging or capturing a diffraction pattern is radiation damage. Radiation damage is caused by undesirable inelastic excitations by the beam on the sample. In this paper we use excited state molecular dynamics simulations to investigate time resolved radiation damage mechanisms in soft matter, as a function of pulse parameters (such as emittance, duration, and brightness).

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