

Abstract Submitted
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Ultrafast Time-resolved Electron Diffraction with Megavolt Electron Beams¹ JEROME HASTINGS, Stanford Linear Accelerator Center, FEDOR RUDAKOV, DAVID DOWELL, JOHN SCHMERGE, STEPHEN GIERMAN, PETER WEBER — An rf photocathode electron gun is used as an electron source for ultrafast time-resolved pump-probe electron diffraction. We observed single-shot diffraction patterns from a 160 nm Al foil using the 5.4 MeV electron beam from the Gun Test Facility at the Stanford Linear Accelerator. Excellent agreement with simulations suggests that single-shot diffraction experiments with a time resolution approaching 100 fs are possible. Details of the measurements and applications will be discussed

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