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Update on the MEDUSA ultrafast electron diffraction beamline at Cornell

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The Micro Electron Diffraction for Ultrafast Structural Analysis (MEDUSA) beamline is an ultrafast electron diffraction (UED) beamline currently operational at Cornell. The MEDUSA beamline specializes in the study of small samples, with electron beam probe sizes down to the single micron scale. These samples can be pumped by lasers with wavelengths ranging from IR to UV. In this proceeding, we discuss the upgrades made to MEDUSA, with a focus on the cryogenic compatibility changes made to allow the study of samples down to liquid nitrogen temperatures. We report on preliminary pump-probe experiments performed at cryogenic temperatures. Additionally, we detail results on aberrations in foil-wound solenoids being used for post-sample magnification of the resulting diffraction patterns.

Footnotes

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