Abstract Submitted
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Talbot Interferometer for Free Electrons[1] BEN MCMORRAN, ALEX CRONIN, University of Arizona — We report the first demonstration of a Talbot interferometer for electrons, similar to ones that have been demonstrated for atoms. The interferometer was used to image the Talbot carpet formed by 2 keV-energy electrons behind a nano-fabricated material grating. The Talbot interferometer design uses two identical gratings, and is particularly sensitive to distortions of the incident wavefronts. To illustrate this we used our interferometer to measure a 2-meter radius of curvature for the wavefronts in a weakly focused electron beam.

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Ben McMorran
University of Arizona

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