

Abstract Submitted
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Simulation of Twisted Electron Mott Scattering JOHN MADSEN,
Mississippi State University — Recently, several groups have demonstrated the ability to produce coherent vortex beams of electrons. These “twisted” beams, generated by imprinting an azimuthal phase dependence via holographic diffraction gratings, are able to carry orbital angular momentum up to $O(100h)$. The possibility of using this twistedness as a degree of freedom in accelerator based scattering experiments presents a potential avenue for direct measurement of the quark OAM contribution to nucleon spin. A more thorough understanding of the differences between planar and twisted electron Mott scattering in the relativistic domain is sought using a wavefunction based simulation.

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