

Abstract Submitted  
for the DPP14 Meeting of  
The American Physical Society

**Particle-in-cell Simulations of Cross-field Propagation by a Beam Composed of Positive and Negative Ions**<sup>1</sup> RYAN GALE, Cornell University, NATHANIEL HICKS, University of Anchorage Alaska — Particle-in-cell simulations of a beam composed of positive and negative ions are performed to explore beam propagation in the presence of a transverse magnetic field. The dependences of propagation on parameters such as beam density and energy, spatial profiles of magnetic field and beam, and beam species are investigated. Initially, 2-D simulations of a slab beam are performed, with the possibility of moving to 3-D to assess effects on the head of the beam. The ability of such a beam to achieve cross-field propagation without dramatic beam losses may be of interest for applications in which delivery of a charge-neutral beam to a target in the presence of a magnetic field is desired.

<sup>1</sup>Special thanks to Tech-X for supplying free student licensing.

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None

Date submitted: 11 Jul 2014

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