

Abstract Submitted  
for the DPP13 Meeting of  
The American Physical Society

**Magnetogenesis Through Kinematic Effects** EVAN MILLER, Dartmouth College — The origin of magnetic fields in the universe is a long-standing astrophysical problem. Though many proposed mechanisms will amplify small magnetic fields in the early universe to the scales we observe today, there remains some mystery as to how those seed fields arose in the first place. We present a novel magnetogenesis mechanism, requiring only classical fluid mechanics and applicable to both cosmological and laboratory scales. Importantly, unlike previous models of seed field generation, this theory does not ultimately depend upon the well-known Biermann Battery. We instead focus on the finite electron inertia/response time generating currents as electrons respond to thermal oscillations.

Evan Miller  
Dartmouth College

Date submitted: 13 Sep 2013

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