

Abstract Submitted
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Charged Particle Interactions with a Static Electromagnetic “Force Field”¹ JOSE PACHECO, DUNCAN WEATHERS, CARLOS ORDONEZ
— Experimental research associated with producing an electromagnetic field referred to as a “force field” is reported. A force field is defined at present as a short-range static electromagnetic field that can simultaneously reflect incident charged particles of either sign of charge. The charged particles can originate from a cloud, plasma or beam. A force field consisting of a spatially periodic sequence of magnetic cusps is investigated, where the magnetic cusps are electrostatically plugged using applied electrostatic potential variations similar to those found in nested Penning traps. Such a configuration could in principle be utilized to trap an effectively unmagnetized or minimum-B configuration plasma. The aim of the work reported is to understand the plasma-particle reflection properties of a planar force field created with straight, parallel line cusps. Initial experimental results are presented.

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