

Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Relativistic framework for non-magnetic analysis and design BENJAMIN LABORDE, UC, Irvine — This paper describes a framework for relativistic analysis with effects identical to that of magnetism, but without using magnetism, and uses this framework to design a device which would be difficult or impossible under magnet analysis. With this framework it is possible to analyze electrical systems completely with relativistic electrodynamics, rather than magnetism and electrostatics, with no loss of accuracy, since the two systems are identical. The framework demonstrates the equivalence of magnetism and relativistic electric charge with a mathematical proof using the classical parallel wires experiment. The paper then proceeds to use this result to design an electric propulsion device through relativistic analysis, rather than magnetic analysis. The benefit of this approach is that it liberates us from the magnetic field, and ascribes the forces on a conducting wire to the current in another wire, some distance away, rather than to a magnetic field in the region of the first wire, as in classical analysis. With this new framework we are able to design devices previously unknown in the magnetic domain. The paper describes one such device, the Action Motor, for producing a one-way force, with potential applications in spacecraft propulsion.

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Date submitted: 04 Mar 2005

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