

Are Maxwell's Equations Fundamental?

ELIZABETH A. RAUSCHER

Tecnic Research Laboratory
Apache Junction, AZ 85119

"elizabeth rauscher" <bvr1001@msn.com>,

We explore the concepts of the manner in which Maxwell's equations and electrodynamic phenomena occupy a role in current Standard Model (SM) and grand unification theories (GUT). We process from the foundations of Hamilton-Jacobi (HJ) paired variable mechanics which underlies the quantum formalism in terms of phase space as (x,p) and (E,t) and also we have demonstrated that both the Poisson equation, the HJ theory are basic to the structure of general relativity. In this paper, we examined a unique approach to electromagnetism in terms of a paired variable or conically conjugate formalism. We have expanded this paired variable formalism to a model of the unification of the four force fields in a multidimensional geometry. This geometry called the Descartes geometry in which we have formulated a group theoretical model. The electromagnetic paired variable formalism occupies a subset of our larger set of group theoretical operations in our attempt to formulate quantum gravity. Comparison is made between our group theoretical approach and the field theoretical quantum relativistic approach of quantum electrodynamics (QED). The drive for completing Einstein's vision of a unified field theory is basic to these approaches.