

# APPLICATIONS OF THE ECE INVARIANCE PRINCIPLE

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## ABSTRACT

The invariance principle of the Einstein Cartan Evans (ECE) unified field theory states that the tetrad postulate is invariant under the general coordinate transformation. It is shown that the invariance principle implies a global component in the definition of phase in physics. This global component is the origin of several well known effects such as the class of Aharonov Bohm effects. The phase in optics and electrodynamics must be defined in such a way as to conserve parity inversion symmetry, and it is shown that the correct definition of phase in this context is in terms of the global component from the invariance principle and the fundamental ECE spin field. The global component is always related to a local component of phase through a Stokes Theorem with covariant derivative. The global component of phase in quantum mechanics implies the existence of a global action or angular momentum. The latter is the global phase multiplied by the reduced Planck constant. Quantum entanglement and one photon interferometric effects are explained with the global action. The latter is derived from general relativity.

Keywords: Invariance principle, ECE theory, covariant Stokes Theorem, global action and angular momentum.

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