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-Cancelled- Formalism and applications of heavy particle effective field theories

Employing induced representations of the Lorentz group (Wigner's little group construction), formalism for constructing heavy particle effective Lagrangians is developed, and Lagrangian constraints enforcing Lorentz invariance of the S matrix are derived. The relationship between Lorentz invariance and reparameterization invariance is established and it is shown why a standard ansatz for implementing reparameterization invariance in heavy fermion effective Lagrangians breaks down at order $1/M^4$. Formalism for fields of arbitrary spin and for self-conjugate fields is presented, and the extension to effective theories of massless fields is discussed.

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