

# Approaches to a Covariant Hamiltonian Formulation of Classical Field Theory

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We give an overview of approaches towards developing a fully covariant hamiltonian formalism for classical field theory in a geometric setting similar to the formulation of classical mechanics in terms of symplectic and Poisson geometry. In particular, we address the search for an adequate definition of Poisson brackets and of polysymplectic and multisymplectic phase spaces.