20th International Summer School on Global Analysis and Applications
General Relativity: 100 years after Hilbert
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Title: Invariant variational problems and cohomology

Marcella Palese

Abstract: We will pose the inverse problem question within the Krupka's variational sequence framework. In particular, the interplay of inverse problems with symmetry and invariance properties will be exploited considering that the cohomology class of the variational Lie derivativative of an equivalence class of forms, closed in the variational sequence, is trivial. We will focalize on the case of symmetries of globally defined field equations which are only locally variational and find sufficient conditions for the variation of local Noether strong currents to be conserved and variationally equivalent to a global conserved current.