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Clebsch (string) decomposition in $d = 3$ field theory. (English) Zbl 0972.81198
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Summary: We study the applicability of the intrinsically nonlinear Clebsch vector field decomposition into three scalars in the description of $d = 3$ field theories. In particular, we note and account for the incompleteness of this parameterization when attempting to use it in variational principles involving Maxwell and Chern-Simons actions. Similarities with string decomposition of metrics and their actions are also pointed out.

MSC:

81T99 Quantum field theory; related classical field theories

Cited in **5** Documents

Keywords:

nonlinear vector field decomposition; variational principles; parameterization incompleteness

Full Text: [DOI](#) [arXiv](#)

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