

PT-invariant couplings between a collection of BF models and a system of 3-form gauge fields

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Abstract

Consistent interactions that can be added to a free, Abelian gauge theory comprising a collection of BF models and a set of three-form gauge fields are investigated from the deformation of the solution to the master equation based on specific cohomological techniques. Under the hypotheses of smooth, local, PT invariant, Lorentz covariant, and Poincaré invariant interactions, supplemented with the requirement on the preservation of the number of derivatives on each field with respect to the free theory, we obtain that the deformation procedure modifies the Lagrangian action, the gauge transformations as well as the accompanying algebra.

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