Lagrangian interactions in a topological BF-type model in D=5 from a cohomological approach[*]

E. M. Cioroianu[1], S. C. Săraru[2]

Faculty of Physics, University of Craiova
13 A. I. Cuza Str., Craiova 200585, Romania

ABSTRACT

All consistent interactions in five spacetime dimensions that can be added to a free BF-type model involving one scalar field, two types of one-forms, two sorts of two-forms, and one three-form are investigated by means of deforming the solution to the master equation with the help of specific cohomological techniques. The couplings are obtained on the grounds of smoothness, locality, (background) Lorentz invariance, Poincaré invariance, and the preservation of the number of derivatives on each field.