Gauge Transformations on Holomorphic Bundles

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Abstract

In holomorphic tangent bundle $T'M$ we define a generalization of classical gauge transformation, called complex gauge transformation, and related to it we shall study the invariant geometric objects: d-gauge tensors, nonlinear gauge connection, gauge complex derivatives.

The problem of global invariance concerning a complex Lagrangian is treated in the section related to Einstein-Yang-Mills complex equations. Finally, we shall discuss a few applications regarding infinitesimal complex gauge transformations.

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$$\gamma \quad \frac{\overline{\Phi}}{} \frac{\Phi}{} \quad m\,\overline{\Phi}\;\Phi \quad -f \quad \overline{\Phi}\;\Phi$$

$$E \quad \gamma \quad \frac{\overline{\Phi}}{} \frac{\Phi}{} \quad m\,\overline{\Phi}\;\Phi \quad -f \quad \overline{\Phi}\;\Phi$$

$\Phi \quad \sqrt{\frac{m}{\sqrt{f}}}$

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