



Mathematical Physics

Hamiltonian dynamics for Einstein's action in $G \rightarrow 0$ limit

Alberto Escalante

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The Hamiltonian analysis for the Einstein's action in $G \rightarrow 0$ limit is performed. Considering the original configuration space without involve the usual ADM variables we show that the version $G \rightarrow 0$ for Einstein's action is devoid of physical degrees of freedom. In addition, we will identify the relevant symmetries of the theory such as the extended action, the extended Hamiltonian, the gauge transformations and the algebra of the constraints. As complement part of this work, we develop the covariant canonical formalism where will be constructed a closed and gauge invariant symplectic form. In particular, using the geometric form we will obtain by means of other way the same symmetries that we found using the Hamiltonian analysis.

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