

Target space structure of 5-dimensional Einstein-Maxwell-Chern-Simons theory with non-SUGRA coupling

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As well known...

- 5D EMCS system with SUGRA coupling can be reduced to $G_2(2)$ nonlinear σ model.
 - Target space is homogeneous sp. $G_2(2)/SO(4)$.
 - Solution generating method using target space symmetry is fruitful there.
 - Black hole uniqueness is discussed as boundary value problem using Mazur identity.

But

- 5D EMCS system with **non**-SUGRA coupling can **also** be reduced to scalar potential system.
 - Target space is **non**-homogeneous space.
 - Target space has **less known symmetry group**.
 - Mazur identity is **not applicable**.



Abstract

- We investigate the geometrical properties of the target space structure of 5D EMCS theory with **non-SUGRA** coupling.
- We show the target space symmetry, the totally geodesic submanifolds, and the sectional curvatures.
- We also discuss the applicability of Bunting identity.