

## Spherically symmetric solution in a space–time with torsion

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**Abstract** By using the method of group analysis, we obtain a new exact evolving and spherically symmetric solution of the Einstein–Cartan equations of motion, corresponding to a space–time threaded with a three-form Kalb–Ramond field strength. The solution describes in its more generic form, a space–time which scalar curvature vanishes for large distances and for large time. In static conditions, it reduces to a classical wormhole solution and to a exact solution with a localized scalar field and a torsion kink, already reported in literature. In the process we have found evidence towards the construction of more new solutions.

**Keywords** Spherically symmetric solution · Space–time with torsion · Group analysis

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