

Homogeneous Solutions of Minimal Massive 3D Gravity

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ABSTRACT

In this talk we construct simply transitive homogeneous solutions of the three-dimensional Minimal Massive Gravity (MMG) model [1]. In addition to those that have analogs in Topologically Massive Gravity [2], such as warped AdS and pp-waves, there are several solutions genuine to MMG. Among them, there is a stationary Lifshitz metric with the dynamical exponent $z=-1$ and an anisotropic Lifshitz spacetime where all coordinates scale differently. Moreover, we identify a homogeneous Kundt solution at the chiral point of the theory. We also show that in a particular limit of the physical parameters in which the Cotton tensor drops out from the MMG field equation, homogeneous solutions exist only at the merger point in the parameter space if they are not conformally flat.

References

- [1] E. Bergshoeff, O. Hohm, W. Merbis, A.J. Routh and P.K. Townsend, *Minimal Massive 3D Gravity*, Class.Quant.Grav. 31 (2014) 145008, arXiv:1404.2867.
- [2] S. Deser, R. Jackiw and S. Templeton, *Topologically Massive Gauge Theories*, Ann.Phys. 140 (1982) 372.