

General Relativity and Quantum Cosmology

Maximal extension of the Schwarzschild spacetime inspired by noncommutative geometry

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We derive a transformation of the noncommutative geometry inspired Schwarzschild solution into new coordinates such that the apparent unphysical singularities of the metric are removed. Moreover, we give the maximal singularity-free atlas for the manifold with the metric under consideration. This atlas reveals many new features e.g. it turns out to describe an infinite lattice of asymptotically flat universes connected by black hole tunnels.

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