

A Description of static Spherically Symmetric Einstein SU(2) Spacetimes with Positive Cosmological Constant

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Abstract

Einstein's equations without cosmological constant coupled to an SU(2) Yang-Mills field admit a family of static spherically symmetric globally smooth solutions. However, no such globally smooth solutions exist if a positive cosmological constant is appended to Einstein's equations. Rather, every solution gives rise to a schwarzschild coordinate singularity.

The talk will focus on the nature of this coordinate singularity and how it affects the global behavior of solutions of the coupled Einstein SU(2) system. A complete description of possible singularities will be presented. This description allows for a rather complete classification of solutions. Of particular interest is the existence of solutions that contain multiple singularities.