



GEOMETRY SESSION

Geometry of static perfect fluid space-time.

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Monday, February 5, 2024.
14h - 14h40

Math Department - SALA B

Abstract.

In this talk, we discuss the geometry of static perfect fluid space-time (SPFST) on compact manifolds with boundary. We use the generalized Reilly's formula to establish a geometric inequality for a SPFST involving the area of the boundary and its volume. Moreover, we obtain new boundary estimates for SPFST. One of the boundary estimates is obtained in terms of the Brown–York mass and another one related to the first eigenvalue of the Jacobi operator. In addition, we provide a new (simply connected) counterexample to the Cosmic no-hair conjecture for arbitrary dimension greater than or equal four. This is a joint work with J. Costa, R. Diógenes and E. Ribeiro Jr..

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