

WORKSHOP ON SUBMANIFOLD THEORY AND GEOMETRIC ANALYSIS

UFSCAR, SÃO CARLOS, BRAZIL, AUGUST 05 – 09, 2019

MONDAY- 15h - 15:30h -AUDITÓRIO DO DM

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Prescribing the curvature of Riemannian manifolds with boundary

ABSTRACT. Let M be a compact connected surface with boundary. We prove that the signal condition given by the Gauss-Bonnet theorem is necessary and sufficient for a given smooth function f on ∂M (resp. on M) to be geodesic curvature of the boundary (resp. the Gauss curvature) of some flat metric on M (resp. metric on M with geodesic boundary). In order to provide analogous results for this problem with $n \geq 3$, we prove some topological restrictions which imply, among other things, that any function that is negative somewhere on ∂M (resp. on M) is a mean curvature of a scalar flat metric on M (resp. scalar curvature of a metric on M and minimal boundary with respect to this metric). As an application of our results, we obtain a classification theorem for manifolds with boundary. This is a joint work with Tiarlos Cruz (UFAL).

Support:



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