



Seminário de Geometria Diferencial USP-UNICAMP

**Regularity of solutions of the isoperimetric problem that are close
to a smooth manifold**

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Resumo: In this work we consider a question in the calculus of variations motivated by riemannian geometry, the isoperimetric problem. We show that solutions to the isoperimetric problem, close in the flat norm to a smooth submanifold, are themselves smooth and $C^{2,\alpha}$ -close to the given submanifold. We show also a version with variable metric on the manifold. The techniques used are, among other, the standards outils of linear elliptic analysis and comparison theorems of riemannian geometry, Allard's regularity theorem for minimizing varifolds, the isometric immersion theorem of Nash and a parametric version due to Gromov.