

## GEOMETRY SEMINAR

**Uniqueness of immersed spheres in Riemannian three-manifolds, and a quasiconformal version of Hopf Theorem****Marcos Paulo Tassi**

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February 24, 2021

Time: 10:30 am

Acesso à sala virtual:

**Abstract.** In this talk will be presented some preliminary results obtained recently in collaboration with J.A. Gálvez and P. Mira, among them: the uniqueness of immersed spheres in Riemannian three-manifolds modelled by sub- and super-solutions of elliptic PDEs, a result that was inspired in the generalized version of Hopf Theorem proven by J.A. Gálvez and P. Mira in [1]; and a “quasiconformal” version of Hopf Theorem, that widely generalizes it and establishes round spheres as the only smooth surfaces of genus zero immersed in  $\mathbb{R}^3$  whose principal curvature diagrams are contained in a wedge determined by straight lines of negative slope.

**References**

- [1] J.A. Gálvez; P. Mira, *Uniqueness of immersed spheres in three-manifolds*, J. Differential Geometry, Volume 116, Number 3 (2020), 459-480.
- [2] H. Hopf, *Differential geometry in the large*, Lecture Notes in Mathematics, Springer-Verlag, Berlin (1983).