

# Uniqueness Theorems for Fully Nonlinear Conformal Equations on Subdomains of the Sphere

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## Resumo/Abstract:

In this talk we extend Escobar's classification result [1] to elliptic fully nonlinear conformal equations on certain subdomains of the sphere with prescribed constant mean curvature on its boundary. Such subdomains are the hemisphere with prescribed constant mean curvature on its boundary, and annular domains with minimal boundary. Our results also apply in the 2-dimensional case, extending some results due to Hang-Wang in [2] and Jimenez in [3]. If time permits, we will present some developments of the technique in new problems.

## References

- [1] J. F. ESCOBAR, *Uniqueness theorems on conformal deformation of metrics, Sobolev inequalities, and an eigenvalue estimate*. Comm. Pure Appl. Math. 43 (1990), no. 7, 857–883.
- [2] F. Hang, X. Wang, *A new approach to some nonlinear geometric equations in dimension two*. Calc. Var. Partial Differential Equations, **26** (2006), 119–135.
- [3] A. Jiménez, *The Liouville equation in an annulus*. Nonlinear Anal., **75** (2012), 2090–2097.