

Estimates of the first Steklov eigenvalue of properly embedded minimal hypersurface with free boundary

Antonio Wilson. R. da Cunha

Universidade Federal do Piauí

wilsoncunha@ufpi.edu.br

Abstract:

We consider a properly embedded minimal hypersurface with free boundary into a compact n -dimensional Riemannian manifold M with nonnegative Ricci curvature and strictly convex boundary. Based on ideas of Barros-Bessa [1], we give an estimate from below for the first nonzero Steklov eigenvalue σ_1 (see [2]), improving on a recent work of Fraser-Li [3].

References

- [1] A. Barros and G. P. Bessa, *Estimates of the first eigenvalue of minimal hypersurfaces of the $(n+1)$ -dimensional sphere*. Mat. Contemp. **17**, (1999) 42–47.
- [2] A. W. Cunha and R. M. Batista, *Estimates of the first Steklov eigenvalue of properly embedded minimal hypersurface with free boundary*. To appear in Bulletin Brazilian Mathematical Society (Online), 2016.
- [3] A. Fraser and M. Li, *Compactness of the space of embedded minimal surfaces with free boundary in three-manifolds with non-negative Ricci curvature and convex boundary*. J. Differential Geom, **96**, no.2, 2014, 183-200.