

MORSE INDEX AND BETTI NUMBERS OF COMPACT MINIMAL HYPERSURFACES

Lucas Ambrozio¹, Alessandro Carlotto², Ben Sharp³

¹ Imperial College London

² ETH - Zürich

³ SNS - Pisa

Resumo/Abstract:

As critical points of the area functional, minimal hypersurfaces of Riemannian manifolds have a well-defined Morse index. In many situations, the knowledge of the index can be used to derive conclusions about the geometry and the topology of the hypersurface itself. In this talk, we will show that under certain conditions on the ambient manifold, the first Betti number of a closed minimal hypersurface is bounded from above by a universal constant times its Morse index. The case of compact free boundary minimal hypersurfaces will be discussed as well. This is a joint work with A. Carlotto and B. Sharp.

References

- [1] L. AMBROZIO, A. CARLOTTO AND B. SHARP, *Comparing the Morse index and the first Betti number of minimal hypersurfaces*, arXiv:1601.08152
- [2] L. AMBROZIO, A. CARLOTTO AND B. SHARP, *Index estimates for free boundary minimal hypersurfaces*, arXiv:1605.09704.