

Morse index and multiplicity of min-max minimal hypersurfaces

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Resumo/Abstract:

The Min-max Theory for the area functional, started by Almgren in the early 1960s and greatly improved by Pitts in 1981, was left incomplete because it gave no Morse index estimate for the min-max minimal hypersurface. Nothing was said also about the fundamental problem of multiplicity. In this talk I will describe our current efforts to develop the theory further. I will discuss the first general Morse index bounds for minimal hypersurfaces produced by the theory. We also settle the multiplicity problem for the classical case of one-parameter sweepouts. If time permits I will mention some conjectures for the field. This is based on joint work with Andre Neves.