Numerically destabilizing minimal discs. (English) Zbl 07589785

Summary: When calculating the index of a minimal surface, the set of smooth functions on a domain with compact support is the standard setting to describe admissible variations. We show that the set of admissible variations can be widened in a geometrically meaningful manner leading to a more general notion of index. This allows us to produce explicit examples of destabilizing perturbations for the fundamental Scherk surface. For the dihedral Enneper surfaces we show that both the classical and modified index can be explicitly determined.

MSC:
32-XX Several complex variables and analytic spaces
49-XX Calculus of variations and optimal control; optimization

Keywords:
stability of minimal surfaces; numerical spectral techniques; bounded index

Full Text: DOI arXiv

References:
[1] Beeson, M.

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