

C^1 -Perturbations of a Continuum of Critical Points

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Abstract

Given a real-valued function having a nondegenerate compact manifold of critical points, some of these points survive under small C^2 -perturbations. This is a well-known result in critical point theory. In 1986, Weinstein obtained the analogous conclusions when the perturbation is only C^1 and the ambient space is a finite-dimensional manifold. In this work we present a complete proof for C^1 perturbations in infinite-dimensional Hilbert spaces. This is a joint work with R. Ortega.

References

- [1] Ortega, R., Urena, A.J., *C^1 -perturbations of a continuum of critical points*. Calc. Var. **65**, 31 (2026). <https://doi.org/10.1007/s00526-025-03200-5>