

Numerical computation of rotation numbers for analytic maps

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Abstract

We present a numerical method to compute rotation numbers of circle diffeomorphisms with high accuracy (see [1]). For the rigorous justification of the method we focus on the analytic case and Diophantine rotation numbers, but the method can be validated in the case of finite differentiability. We also present some numerical experiments showing that the method also works for rational rotation numbers. Several applications are discussed.

References

- [1] T.M. Seara and J. Villanueva. On the numerical computation of Diophantine rotation numbers of analytic circle maps. Preprint <http://www.ma1.upc.edu/recerca/2004-2005.html>