

Mathematics > Dynamical Systems

On evaluation of the topological degree of the Poincare map in some singular situations

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(Submitted on 5 Nov 2010)

In the paper we develop a method to evaluate the topological degree of the Poincare map of the mathematical model of narrow lagoon subject to a T-periodic forcing. Using the method developed we arrive to the conditions for the parameters that guarantee the existence of T-periodic solutions in a given region. The difficulty towards implementing this plan is caused by the fact that the direct employing of M.A. Krasnoselski-A.I. Perov irreversibility approach leads to a singular vector field.

Comments: 9 pages, 2 figures

Subjects: **Dynamical Systems (math.DS)**

MSC classes: 34C05

Cite as: [arXiv:1011.1453v1](https://arxiv.org/abs/1011.1453v1) [math.DS]

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