Mathematics > Dynamical Systems

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

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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 developved we arrive to the conditions for the parameteres 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.

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