PDE, Complex Analysis and Differential Geometry

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Title: Continuity Properties of the Solution Map for the Generalized Ostrovsky Equation

Abstract:
It is shown that the data-to-solution map for the generalized Ostrovsky (gO) equation is not uniformly continuous on bounded sets in Sobolev spaces on the circle with exponent $s > 3/2$. Considering that for this range of exponents the gO equation is well-posed with continuous dependence on initial data, this result makes the continuity of the solution map an optimal property. However, if a weaker H^r-topology is used then it is shown that the solution map becomes Hölder continuous in H^s.