

119. Zvi Artstein, C. William Gear, Ioannis G. Kevrekidis, Marshall Slemrod and Edriss S. Titi, **Analysis and computation of a discrete KdV-Burgers type equation with fast dispersions and slow diffusion**. SIAM J. Numerical Analysis 49 (2011), 2124-2143.

Abstract. The long time behavior of the dynamics of a fast-slow system of ordinary differential equations is examined. The system is derived from a spatial discretization of a Korteweg-de Vries-Burgers type equation, with fast dispersion and slow diffusion. The discretization is based on a model developed by Goodman and Lax, that is composed of a fast system drifted by a slow forcing term. A natural split to fast and slow variables is not available. Our approach views the limit behavior as an invariant measure of the fast motion drifted by the slow component, where the known constants of motion of the fast system are employed as slowly evolving observables; averaging equations of the latter lead to computation of characteristic features of the motion. Some computations are presented in the paper.

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