

Explicit compacton and generalized kink wave solutions for a CH-DP equation

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Abstract

In this paper, we consider a Camassa and Holm-Degasperis and Procesi (CH-DP) equation $u_t - c_0 u_x + 4uu_x - \alpha^2(u_{xxt} + uu_{xxx} + 3u_x u_{xx}) + \gamma u_{xxx} = 0$. By using the bifurcation method of dynamical systems, some new explicit compacton and generalized kink wave solutions are presented through some special phase orbits. The results of before references are extended.

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CH-DPequation.pdf available at <https://authorea.com/users/330675/articles/457463-explicit-compacton-and-generalized-kink-wave-solutions-for-a-ch-dp-equation>

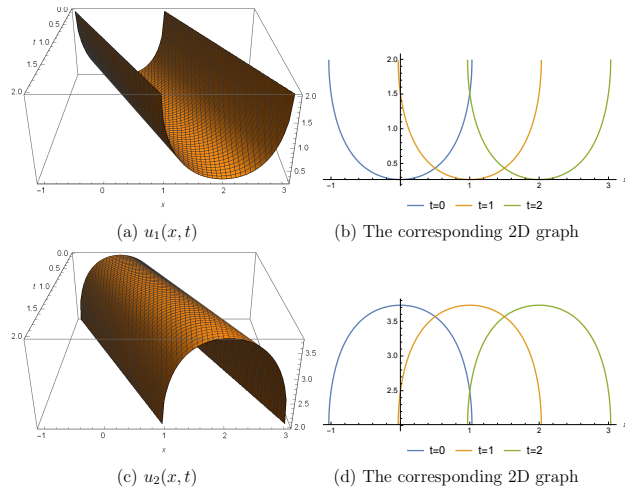


Fig.1 The graphs of compacton wave solutions $u_1(x, t)$ and $u_2(x, t)$ when $c_0 = 7$, $\alpha = 1$, $\gamma = 1$ and $h = -1$.