
Long-Time Asymptotics for the Camassa-Holm Equation

TUE/E3.1 12:00–12:20

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The Camassa–Holm (CH) equation was introduced in 1993 by Camassa and Holm as a model for shallow water waves. As the Korteweg–de Vries (KdV) equation, it is integrable and can be solved via the inverse scattering method. However, in contradistinction to KdV it also models breaking of waves and hence has attracted much interest. We will consider decaying solutions with positive momentum and show that they split into a number of solitons together with a decaying radiation tail. The radiation tail consist of two oscillatory regions and one where solutions decay rapidly. Using the nonlinear steepest decent method complete asymptotic formulas are derived for these regions.

- [1] A. BOUTET DE MONVEL, A. KOSTENKO, D. SHEPELSKY, AND G. TESCHL: *Long-time asymptotics for the Camassa-Holm equation*, SIAM J. Math. Anal. (to appear). <http://arxiv.org/abs/0902.0391>