

A rigidity result for the Camassa-Holm equation

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The Camassa-Holm equation possesses peaked solitary waves called peakons. We prove a Liouville property for uniformly almost localized (up to translations) H^1 -global solutions of the Camassa-Holm equation with a momentum density that is a non negative finite measure. More precisely, we show that such solution has to be a peakon. As a consequence, we prove that peakons are asymptotically stable in the class of H^1 -functions with a momentum density that is a non negative finite measure.

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