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Fabio Pusateri*, fabiop@math.princeton.edu. *Global existence for water waves in two dimensions.*

We consider the water waves system for the evolution of a perfect fluid with a free surface, in 2 spatial dimensions, under the influence of gravity. For sufficiently smooth and localized initial data we prove global existence of small solutions. We also prove that the asymptotic behavior of solutions as time goes to infinity is different from linear, unlike the 3d case. Joint work with A. Ionescu. (Received August 29, 2013)