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Justin Holmer* (justin_holmer@brown.edu), Providence, RI 02912. *Dynamics of mKdV solitons under perturbation.*

We consider the mKdV (modified Korteweg-de Vries) equation for which there is a two parameter family of solitary waves (parameters of position and scale). When a slowly varying potential is added to the equation, we construct, to arbitrarily high order, a distorted soliton manifold and prove that solutions that start close to this manifold remain close to this manifold, with precisely given parameter dynamics, up to a dynamically relevant time scale. Results for other equations are surveyed. (Received January 18, 2017)