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Generalized Solitary Waves

Roger Grimshaw

Loughborough University, Department of Mathematical Sciences, Loughborough, United Kingdom
(r.h.j.grimshaw@lboro.ac.uk, +44-(0)1509-223969)

Generalized solitary waves, otherwise sometimes also known as weakly non-local solitary waves, are a generic class of nonlinear waves, which can arise in many physical contexts. Typically they consist of a pulse-like central core accompanied by co-propagating short oscillatory wave tails. In the atmosphere and ocean they can occur for internal waves of mode numbers greater than the fundamental, and for Rossby waves in a similar situation. In this talk I will use a model system consisting of two coupled Korteweg de Vries equations to describe how generalized solitary waves arise, and how exponential asymptotics is needed to find the oscillatory wave tails.