The Cauchy problem for the Dysthe equation

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Abstract

The Dysthe equation is a higher order approximation of the water waves system in the modulation (Schrödinger) regime and in the infinite depth case. We first review the derivation of the Dysthe and related equations. Then we study Cauchy problem and prove in particular a small data global well-posedness and scattering result in the critical space $L^2(\mathbb{R}^2)$.

This is a joint work with Razvan Mosincat and Didier Pilod.