



On perturbation of completely integrable PDEs

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摘要: We revisit the perturbative theory of infinite-dimensional integrable systems developed by P. Deift and X. Zhou, aiming to provide new and simpler proofs of some key L^∞ bounds and L^p a priori estimates. Our proofs emphasize a further step towards understanding focusing problems and extending the applicability to other integrable models. As a concrete application, we examine the perturbation of the one-dimensional defocusing cubic nonlinear Schrödinger equation and modified KdV equations.

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