

New estimates for $1d$ dispersive PDE

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Abstract: The water wave problem in $2d$ reduces to a nonlinear $1d$ dispersive PDE. In this talk, I will present joint work with Sijue Wu developing a class of new L^∞ bounds for solutions to $1d$ linear dispersive PDE, motivated by the water wave problem. The main ingredients in the proofs are the method of invariant vector fields and techniques from oscillatory integrals.