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**Accuracy of Equations Modeling Higher Harmonics in Surface Water Waves** HANNAH POTGIETER, JOHN CARTER, Seattle University — We study the evolution of the higher harmonics in surface water wave experiments. We compare numerical predictions from asymptotic reductions of the Euler equations and its dissipative generalizations with measurements from water wave experiments conducted at Penn State University. Our models include the (i) nonlinear Schrödinger equation (NLS), (ii) dissipative NLS equation, (iii) Dysthe equation, (iv) viscous Dysthe equation, and (v) the dissipative Gramstad-Trulsen equation. We find the predictions from these models are not always consistent with the experimental data.

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