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A new approach to Scattering: On the Asymptotic states of Nonlinear Dispersive and Hyperbolic equations with General Data

University of Tübingen, Mathematics Department, C3N14 and via Zoom:
https://zoom.us/j/94274376976?pwd=YVBvU2tNMTBXSGxGYVg4eUoyV1ZiQT09
Meeting-ID: 942 7437 6976
Passcode: 929851

Abstract:

I will present a new approach to finding the asymptotic states of Nonlinear Wave Equations with general initial data.

In particular, we show for a large class of equations, that all asymptotic states are linear combinations of free wave, localized parts (solitons, breathers..) and a possibility of self-similar solutions as well in some cases. These results hold for initial data for which the H^1 Sobolev norm (the energy norm) is uniformly bounded in time.

This answers the question of Asymptotic Completeness to a large class of equations, including for the first time, equations with time dependent potentials.

These are joint works with Baoping Liu (Peking Univ) and Xiaoxu Wu (Rutgers).