

An analysis of deterministic scattering for Non Linear Schrödinger equations after a detour through probabilistic theory

Nicolas Burq

Univerisité Paris Saclay, Orsay
nicolas.burq@universite-paris-saclay.fr

28 août 2022

In this talk I will present new results about the structure of scattering operators for energy subcritical Schrödinger equations. Many results have been obtained in the past on scattering in such setting, and more recently we developed with Tzvetkov and Thomann these approaches for random data, leading to almost sure scattering results. This probabilistic setting allowed for more rough data, and exhibited an almost sure smoothing effect for the wave operators. Namely, the (almost surely defined) wave operators are equal to the identity plus a smoothing term. All the subsequent works on the topic also exhibit this smoothing property in the random context. As a consequence, a natural question was whether this probabilistic approach was necessary to get such smoothing property. I will show in this talk on an example, that this is not the case and the smoothing property also holds in the deterministic setting. **Acknowledgment :**

This is a joint work with N. Tzvetkov (Univ. Cergy and ENS Lyon) and N. Visciglia (Univ. Pisa).