

On long time instability of the zero solution to the periodic cubic NLS equations the rational versus the irrational case

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The aim of this talk is to analyze the long time instability of the zero solution of the 2D periodic defocusing cubic NLS, while outlining the differences between the dynamics on rational versus irrational tori. In particular we will analyze the structure of the resonance sets in these two different set ups. This instability can also be related to well known phenomena such as energy transfer and forward cascade.

References

- [1] Gigliola Staffilani and Bobby Wilson, Stability of the Cubic Nonlinear Schrödinger Equation on Irrational Tori, *Preprint, arXiv:1806.01635*.