

Thomas Kappeler *Large KAM tori for arbitrary semi-linear perturbations of the defocusing NLS equation*

We prove that small, semi-linear perturbations of the defocusing NLS equation on the circle have an abundance of invariant tori of arbitrary finite dimension and arbitrary size which support quasi-periodic solutions. The perturbations are assumed to be of finite regularity, but otherwise arbitrary. In particular they might depend on the space variable. The proof is based on a Newton-Nash-Moser iteration scheme to construct the invariant tori for the perturbed equation and uses that the defocusing NLS equation admits global Birkhoff coordinates. This is joint work (to appear in *Astrisque*) with Massimiliano Berti and Riccardo Montalto.