

THOMANN Laurent

Modified scattering for the Gross-Pitaevskii equation

We consider the cubic nonlinear Schrödinger equation with harmonic trapping. In the case when all but one directions are trapped, we prove modified scattering and construct modified wave operators for small initial and final data respectively. Actually, we prove that the asymptotic behavior of the solutions is given by a simpler equation, depending on the resonances of the GP equation, and we exhibit some particular solutions of it.