Mean field limit for discrete NLS: analysis and numerics

Abstract

We deal with approximations of the time-dependent linear many body Schrödinger equation with a two particles interaction potential, by introducing a discrete version of the equation and mean field limits. We consider the bosonic Fock space in a finite dimensionial setting. Mathematical tools include the reduced density matrices and Wigner measure techniques exploiting the formal analogy to semi-classical limits.

Keywords: Bosons, second quantization, mean field limit, Wigner measure.

References

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