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Eigenmodes in nearly integrable quantum chains

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Abstract

Apparent incompatibility of classical irreversible thermodynamics with

Keywords: *integrals of motion, ETH, integrability breaking, XXZ model*

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1 Introduction

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Lanczos algorithm

The main purpose of this thesis is to develop and test a set of numerical tools based on the Lanczos algorithm, which is an iterative method for finding extremal eigenvalues of a large matrix. In its simplest form, it is useful for efficient calculation of a ground state energy and eigenvector, and subsequently for determining the ground state properties of a system of choice. However, in this work we are mainly interested in infinite temperature properties, which requires sampling of the whole spectrum of Hamiltonian in question.

2.1 Lanczos method for ground state calculation

3 Summary

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Appendix