

# QLunch: The ground state energy of dilute 1d quantum systems

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# Overview

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# Background

# Main result

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# Variational principle

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# Trial state

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# Some useful bounds

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# Collecting everything

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# Lower bound

# The Lieb-Liniger (LL) model

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# Reducing to the LL model

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# Lower bound for specific particle number

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# General lower bound

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