

An Introduction to Decoding Quantum Error Correction Codes

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The decoding problem for quantum error correction codes involves selecting an error correction chain based on the measured syndrome. It is crucial that the decoder operates efficiently and has a high threshold, as error rates above this threshold lead to an increase in the logical failure rate of the code as the code distance increases, rather than decreasing. For each combination of code, error model, and decoding algorithm, a specific threshold exists. In this talk, we will discuss the characteristics of this issue.

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