

Thermal State Prep

Nathan Wiebe, Matthew Hagan

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1 Introduction

Thermal state preparation occupies a unique spot in quantum information sciences: Preparing thermal states for arbitrary Hamiltonians for arbitrary temperatures is *QMA*-Hard, however thermal states are incredibly useful inputs whenever low energy states are needed, such as when training Boltzmann machines [1], preparing ground states for quantum error correcting codes [2], or starting states for chemistry simulations [3].