Practical variational tomography for critical 1D systems JONG
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— We further investigate a recently introduced efficient quantum state reconstruc-
tion procedure targeted to states well-approximated by the multi-scale entangle-
ment renormalization ansatz (MERA). First, we introduce an improved optimization
scheme that can be easily generalized for MERA states with larger bond dimension.
Second, we provide a detailed analysis of the error propagation and quantify how
it affects the distance between the experimental state and the reconstructed state.
Third, we explain how to bound this distance using local data, providing an effi-
cient scalable certification method. Fourth, we examine the performance of MERA
tomography on the ground states of several 1D critical models.

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