Entanglement from tensor networks on a trapped-ion QCCD quantum computer

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- Matrix product states (MPS)
- Simulating MPS with quantum computer
- Results

Matrix product states (MPS)

$$\sum_{\sigma_1\sigma_2\cdots\sigma_n} c_{\sigma_1\sigma_2\cdots\sigma_n} \left|\sigma_1\sigma_2\cdots\sigma_n\right\rangle$$

Matrix product states (MPS)

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Minimum matrix dimension:
entanglement in the system

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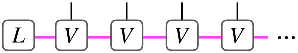
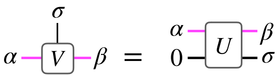
Embedding into the product space





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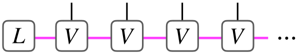

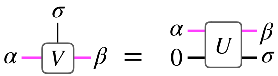

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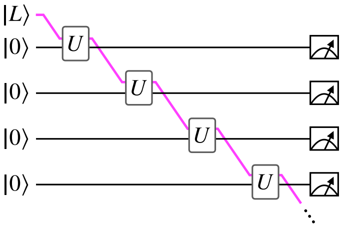

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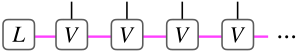

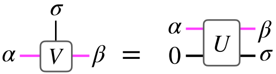

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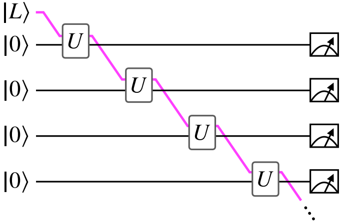

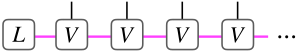

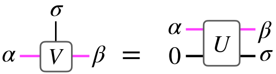

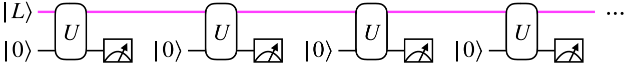

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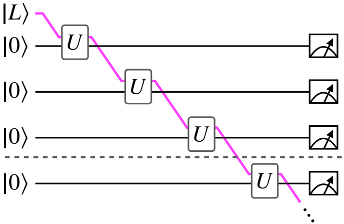

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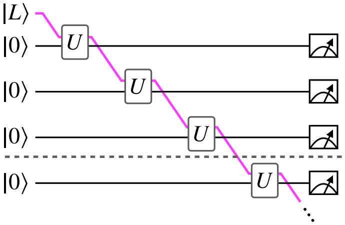

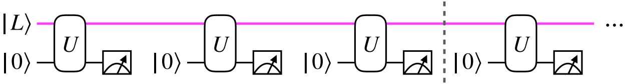

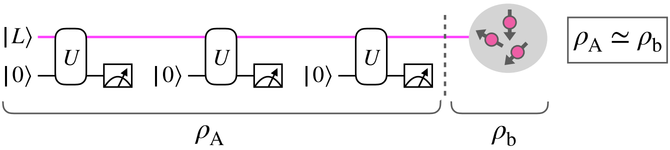

Results