

Matrix product states with long-range localizable entanglement

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We derive a criterion to determine when a translationally invariant matrix product state (MPS) has long-range localizable entanglement, where that quantity remains finite in the thermodynamic limit. We give examples fulfilling this criterion and eventually use it to obtain all such MPS with bond dimension 2 and 3.

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- [32.10.+c Communication over noisy channels](#) [6]
- [AQUTE](#) [7]
- [03.05.+c Characterization and classification of entanglement](#) [8]
- [06.15.+e Measurement-induced transformations](#) [9]
- [03.10.+m Entanglement measures](#) [10]
- [Result](#) [11]
- [04.90.+t Entanglement transfer](#) [12]

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