

The Dyson Series as a Matrix Product Operator

Tuesday 7 October 2025 17:15 (2 hours)

We introduce a matrix product operator (MPO) encoding of the Dyson series, which is the time-evolution operator for quantum systems with time-dependent Hamiltonians. The MPO can be made accurate up to arbitrary order in the timestep, the construction can be applied to both finite and infinite systems and it can handle long-range interactions.

Author: VANTHILT, Victor (Ghent University)

Presenter: VANTHILT, Victor (Ghent University)

Session Classification: Poster Session