Quantum Technology Initiative Journal Club

Report of Contributions

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Matteo Robbiati (CERN)

Thursday 5 December 2024 16:00 (40 minutes)

TITLE: Boosting ground states preparation with double-bracket quantum algorithms (part 2)
SUBTITLE: Interfacing DBQAs with other techniques

PAPER REF 1: https://arxiv.org/abs/2206.11772 (DBQA)
PAPER REF 2: https://arxiv.org/abs/2408.03987 (Ground state preparation)

ABSTRACT:
We discuss the cost of implementing double-bracket quantum algorithms on a device and the idea of interfacing this technique with other methods. In this case, the combined usage of DBQAs and VQEs allows to boost che ground state preparation of target Hamiltonians while keeping under control the number of gates required to compile the whole procedure. After a brief theoretical introduction, we move to an hands-on session to apply this procedure in practice.

REQUIREMENTS:
Look at requirements.txt file which can be found at: https://github.com/MatteoRobbiati/notebooks/tree/main/double_bracke

Presenter: ROBBIATI, Matteo (Università degli Studi e INFN Milano (IT))

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