

8th RED LHC workshop



Contribution ID: 1

Type: not specified

A dynamical implementation of canonical second quantization on a quantum computer

We provide the necessary theoretical methods for the implementation of creation and destruction operators in separate registers of a quantum computer, allowing for a transparent and dynamical creation and destruction of particle modes in second quantization in problems with variable particle number. We establish theorems for the commutation (anticommutation) relations and provide the needed symmetrizing and antisymmetrizing operators. Finally, we provide formulae in terms of these operators for unitary evolution under conventional two- and four-body Hamiltonian terms.

Primary authors: GÁLVEZ VIRUET, Juan José (Univ. Complutense Madrid); LLANES-ESTRADA, Felipe J.

Presenter: LLANES-ESTRADA, Felipe J.