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Contribution ID: **4455** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Lattice Gauge theory on the Triamond Lattice

Monday, 27 May 2024 17:00 (15 minutes)

The Triamond lattice is the only maximally isotropic lattice where three links meet at each vertex, and for technical reasons, that provides an elegant bookkeeping method for quantum field theories on a lattice. Considering that until now, most researchers have not attempted to simulate Hamiltonians in three spatial dimensions, this work is an important step toward large-scale simulation on quantum computers. Specifically, we studied the geometry of the Triamond lattice, derived its Hamiltonian, and calculated the ground state of the unit cell of this lattice by imposing the periodic boundary condition on each face of the unit cell.

Keyword-1

Quantum lattice simulation

Keyword-2

Triamond Lattice

Keyword-3

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