Contribution ID: **21** Type: **not specified**

Hamiltonian simulation in the Pauli basis and some physics applications

Tuesday, 28 May 2024 10:30 (20 minutes)

We propose a new method for computing operator exponentials for Hamiltonians that can be spanned by a set of n-qubit Pauli operators closed with respect to the composition. The method is based on the use of the Cauchy integral formula, in which the resolvent is represented in the form of a linear combination of the same Pauli operators, as the Hamiltonian under consideration, with unknown coefficients. The final result can be obtained by the method of residues. As examples of the application of the method, we consider some toy models of condensed matter physics.

Primary author: TSIRULEV, Alexander (Tver State University)

Presenter: TSIRULEV, Alexander (Tver State University)