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QUANTUM WALKS

Monday 7 September 2020 11:15 (45 minutes)

Quantum walks represent a generalization of the random walk to the coherent evolution of the quantum particle on a graph or a lattice. We provide an overview of the concept, focusing on the discrete-time quantum walk, and illustrate the applications in quantum simulations and quantum computation. Finally, we introduce a very successful experimental implementation of quantum walks which is based on photonic time-multiplexing, and review the recent experiments.

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