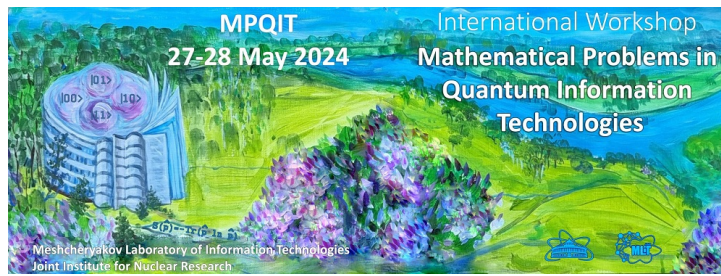


# Mathematical Problems in Quantum Information Technologies



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## Mathematical aspects of QUBO formulations for particle tracking algorithms

*Tuesday, 28 May 2024 12:40 (20 minutes)*

SPD (Spin Physics Detector) is a planned future experiment on the NICA megascience project developed in Dubna. Based on modeling data of the SPD experiment, this work is the first attempt to use the Hopfield network approach to formulate a QUBO problem and use simulated annealing to estimate the feasibility of the future use of quantum annealing to speed up present SPD particle tracking approaches. In this talk, we will stress several aspects of formulating particle tracking as QUBO, especially how to implement constraints.

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