Collaborative design of a trapped-ion quantum computer with fully interconnected qubits

Thursday, 30 June 2022 11:00 (22 minutes)

Research groups in a wide range of disciplines at the Leibniz Universität Hannover, the Physikalisch-Technische Bundesanstalt (PTB) Braunschweig, and the Technische Universität Braunschweig are working together in the newly-created Quantum Valley Lower Saxony to create a trapped-ion quantum computer with fully interconnected qubits. A pair of existing trapped-ion experiments, one at LUH and one at PTB, have already provided the proof-of-concept for most of the key aspects that we require in the next stage of our project. This talk will provide an overview of the project, discuss the techniques and designs that have already been proven to work, and then discuss our plan for developing a quantum computer capable of running quantum operations on 50 Beryllium ion qubits by 2025.

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