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Experimental Quantum Control with the IBM Quantum Computers

Thursday, 1 September 2022 11:30 (30 minutes)

In this talk I will review the very recent experiments conducted by my group on various quantum control techniques at some of the open-access IBM quantum processors. In particular, I will show results on quantum control by composite pulses, quantum control by polychromatic pulse trains, quantum sensing of small frequency shifts, tuning the parameters of the quantum computer, dynamical decoupling from noise, power narrowing, and others. Our results demonstrate an excellent agreement between theory and experiment, which indicates both the power of the quantum control technique and the high quality of the superconducting qubits in use at IBM Quantum.

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