

The Research Driving Hybrid Control Technology Towards Useful Quantum Computing

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Scaling quantum processors introduces new requirements on control, such as ensuring high-fidelity qubit operations by optimizing the analog front-end, automating calibration workflows, and integrating hybrid control for quantum error correction. To make significant progress, we need clear understanding of both present technology and the demands of future large-scale quantum computers. Deep research is needed, both in academia and industry, to unveil the important bottlenecks and their possible solution. In this talk, we will explore key technical challenges and focus on how the research done in QM facilitates informed definition of the control system requirements paving the way towards useful quantum computing.