

Condensed Matter Seminar

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“Using Device Physics and Error Mitigation to Improve the Performance of Quantum Computers”

Monday, October 17, 2022

4:00pm-5:00pm

Zoom Link: <https://virginiatech.zoom.us/j/81824104688?pwd=UHdRa1M4YXRvamZueUNCbUgwWWUvUT09>

Passcode: 980743

Quantum processors have seen rapid development over the past two decades, and continue to improve in terms of number of qubits and error rates. Despite this, these limitations largely prevent researchers from using them for problems not feasible for classical computers. For this reason, there is still a need to design the algorithm, circuits, and other components to account for hardware-level limitations. In this talk, I will discuss a collection of works that attempt to address this high level question in terms of readout error mitigation for variational algorithms, the design of tunable CPHASE gates for transmons, and symmetry-enforcing ansätze. In each case I discuss software written to make these techniques available and useful to others.