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Mitigating quantum errors with Mitiq

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This talk introduces an open-source package for error-mitigation in quantum computation using zero-noise extrapolation. Error-mitigation techniques improve computational performance (with respect to noise) using minimal overhead in quantum resources by relying on a mixture of quantum sampling and classical post-processing techniques. Our error-mitigation package interfaces with multiple quantum computing software stacks, and we demonstrate improved performance on a variety of benchmarks performed on IBM and Rigetti quantum processors. We describe the library using code snippets to demonstrate usage and discuss features, support, and contribution guidelines.We also report on how cloud-based interactive workshops have helped develop the library with feedback from the research community.

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Session Classification: Contributed