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Abstract for an Invited Paper
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Quantum Information with Trapped Ions[1]

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Quantum computation promises an exponential algorithmic speed up over classical computation. Currently quantum computing hardware is limited by errors in the control and unwanted interactions with the environment. I will present our theoretical and experimental work on removing both control and algorithmic errors in ion trap quantum processors. I will also discuss proposals for scaling ion trap quantum computers from 10's to 100's of qubits.

[1]IARPA, NSF