Small-scale quantum computers: current state of the art and applications

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This talk discusses the various applications of small scale quantum computers consisting of a few hundred qubits and capable of performing a few thousand quantum logic operations reliably without error corrections. Such small scale quantum computers could perform useful quantum simulations of many-body quantum systems, including processes of many body localization and scrambling. I will show that such small scale quantum computers could also be useful for quantum machine learning, revealing patterns in quantum states and in classical data that could not be revealed by even the most powerful classical supercomputer.