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Seminario

Centro de Modelamiento Matemático

Expositor

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(IBM)

title
Applications of noisy quantum devices

Abstract:

Near-term applications of early quantum devices rely on accurate estimates of expectation values to become relevant. Decoherence and gate errors lead to wrong estimates. This problem was, at least in theory, remedied with the advent of quantum error correction. However, the overhead that is needed to implement a fully fault-tolerant gate set with current codes and current devices seems prohibitively large. In turn, steady progress is made in improving the quality of the quantum hardware and we believe that we can build machines in the near term that cannot be emulated by a conventional computer. In light of recent progress mitigating the effect of decoherence on expectation values, it becomes interesting to ask what these noisy devices can be used for. In this talk we will present our advances in finding answers to this question and we will discuss possible applications of near-term quantum devices. The application areas range from problems in quantum simulation to simple tasks in machine learning.

Viernes 11 de enero a las 16:00 hrs, Sala de Sala seminarios DIM, Torre Norte, 5to piso, Beauchef 851.

