Contribution ID: **79**   Type: **not specified**

Quantum simulation of spin models with IBM Quantum Computer

Wednesday, 13 June 2018 14:30 (30 minutes)

Here we show, as a proof-of-principle, that several model Hamiltonian of interest in condensed matter physics can be simulated on IBM quantum chip. Simulations are realized by using the Quantum Information Software Kit (QISKit), i.e. an open source software development kit for working with the IBM Q quantum processors, create quantum computing programs, compile, and execute them online in a real quantum processor.
While our simulations are still limited by the coherence time of available qubits, they could be extended with forthcoming technological progresses to a number of spins that cannot be managed by a classical device.

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Session Classification: Tecnologie Software