



Contribution ID: 73

Type: **Poster**

Is Quantum Computing energy efficient? An Investigation on a quantum annealer.

Thursday 14 March 2024 16:10 (30 minutes)

The environmental impact of computing activities is starting to be acknowledged as relevant and several scientific initiatives and research lines are gathering momentum in the scientific community to identify and curb it. Governments, industries, and commercial businesses are now holding high expectations for quantum technologies as they have the potential to create greener and faster methods for information processing. The energy perspective of such technologies, however, has remained rather outside the scopes of current deployment strategies, which might limit future adoptions.

In order to shed some light upon the interplay between classical/quantum computing and energy efficiency, we perform a comparison between these two paradigms over selected benchmark activities. In particular, we will compare traditional HPC technologies with the D-Wave Advantage quantum annealer and analyze the outcome of the experiment.

Significance

References

Experiment context, if any

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Session Classification: Poster session with coffee break

Track Classification: Track 1: Computing Technology for Physics Research