

The Center for Quantum Technology and Applications: activities and use cases

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Abstract

The Center for Quantum Technology and Applications (CQTA) in Zeuthen is a science-led center, which will enable researchers from universities, industry, and other research institutions to develop new applications for complex quantum systems, or to develop optimization algorithms for current and future quantum computers. In the presentation the activities of the center in the areas of theoretical and experimental physics [1], classical optimization problems as well as quantum art will be discussed.

References

- [1] Alberto Di Meglio, Karl Jansen, Ivano Tavernelli et.al., Quantum Computing for High Energy Physics: State of the Art and Challenges. Summary of the QC4HEP Working Group, arxiv:2307:03236.

Figures

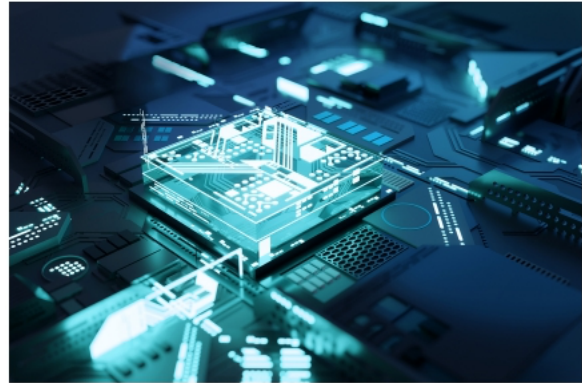


Figure 1: Quantum computing offers the fascinating opportunity to solve problems which are extremely hard or even impossible to address on conventional computers. It opens up unimagined possibilities and may speed up research and development in many other fields.

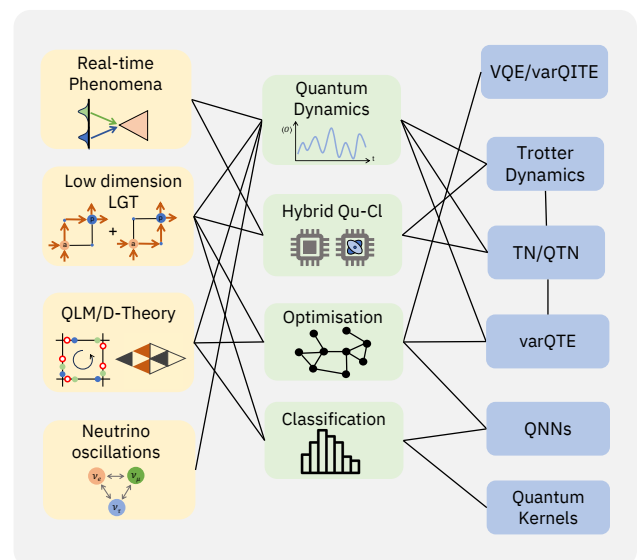


Figure 2: Proposed theoretical physical model systems (orange) with corresponding approaches (green) and quantum algorithms (blue), taken from [1].

