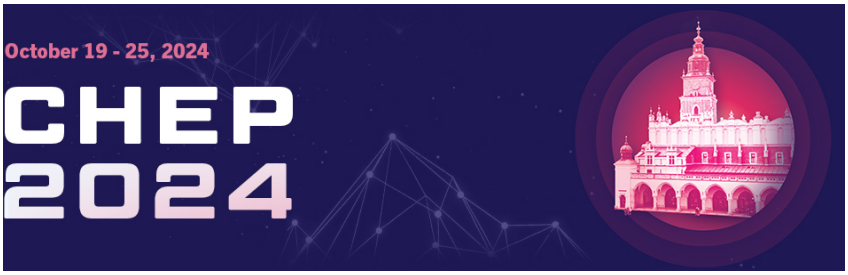


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# Quantum Computing for High energy physics: CERN perspective

*Tuesday 22 October 2024 09:30 (30 minutes)*

This year CERN celebrates its 70th Anniversary, and the 60th anniversary of Bell's theorem, a result that arguably had the single strongest impact on modern foundations of quantum physics, both at the conceptual and methodological level, as well as at the level of its applications in information theory and technology.
CERN has started its second phase of the Quantum Technology Initiative with a 5-year-term plan aligned with the CERN research and collaboration objectives. This effort is designed to build specific capacity and technology platforms and support a longer-term strategy to use quantum technology at CERN and in HEP in the future. After a preliminary introduction about the promise of quantum computing, we will discuss main research directions and results from theoretical foundations of quantum machine learning algorithms to application in several areas of HEP.

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