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Quantum Machine Learning Integration in the High Energy Physics Pipeline

Monday 4 November 2024 10:05 (1 hour)

The integration of Quantum Machine Learning (QML) into the High Energy Physics (HEP) pipeline represents a transformative approach to addressing computational challenges in the analysis of vast and complex datasets. This talk will explore the synergy between quantum computing and machine learning, demonstrating how QML algorithms can handle HEP data sets and where QML has been applied to HEP challenges, such as anomaly detection, event classification, cross section integration and will outline future directions for incorporating quantum technologies into the broader HEP research framework and beyond.

Presenter: Dr GROSSI, Michele (CERN)

Session Classification: Applications of Tensor Networks (TN) and Quantum Machine Learning (QML) to High-Energy Physics