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# Machine Learning Techniques to Enhance Event Reconstruction in Water Cherenkov Detectors

*Thursday, 4 August 2022 14:20 (22 minutes)*

Hyper-Kamiokande (Hyper-K) is the next generation water-Cherenkov neutrino experiment, building on the success of its predecessor Super-Kamiokande. To match the increased precision and reduced statistical errors of the new detectors, improvements to event reconstruction and event selection are required to suppress backgrounds and minimise systematic errors. Machine learning has the potential to provide these enhancements, enabling the precision measurements that Hyper-K is aiming to perform. This talk provides an overview of the areas where machine learning is being explored for Hyper-K's water Cherenkov detectors. Results using various network architectures are presented, along with comparisons to traditional methods and discussion of the challenges and future plans for applying machine learning techniques.

## Attendance type

In-person presentation

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**Session Classification:**   Joint Session

**Track Classification:**   WG1: Neutrino Oscillation Physics