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Type: **Short talk (15min. + 5 min. Q/A)**

Vision Transformers for event reconstruction in water Cherenkov detector

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Hyper-Kamiokande (Hyper-K) is a next-generation water Cherenkov neutrino experiment currently under construction, designed to address key questions in particle physics, including leptonic CP violation and proton decay. Convolutional neural networks (CNNs) have previously been applied to water Cherenkov detectors by treating PMTs as pixels, with charge and timing information serving as input features. In this work, we introduce an innovative application of the Vision Transformer (ViT) model. As an image-based architecture, ViT shows promising performance in event reconstruction, suggesting potential advantages over CNNs or graph neural networks (GNNs) in water Cherenkov detectors. In this talk, I will outline the ViT network architecture, discuss the motivation for exploring ViT and present initial results with SwinT, a variant of ViT, which indicate encouraging performance in water Cherenkov detector applications.

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Session Classification: Experiments - SK/HK