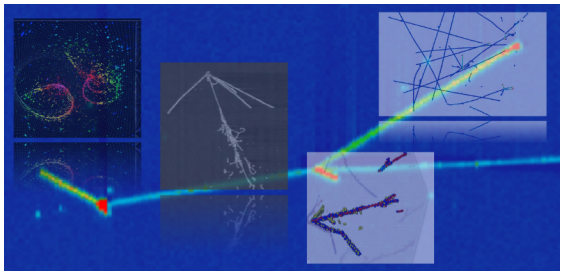

Contribution ID: **1** Type: **Individual Talk**

Deep learning in voxelised neutrino detectors

Tuesday, 22 August 2023 09:15 (35 minutes)

Deep learning methods are becoming key in the data analysis of particle physics experiments. One clear example is the improvement of neutrino detection using neural networks. Current neutrino experiments are leveraging these techniques, which, in combination, have exhibited to outperform standard tools in several domains, such as identifying neutrino interactions or reconstructing the kinematics of single particles. In this talk, I will show various deep-learning algorithms used in the context of voxelised neutrino detectors. I will present how to design and use advanced deep-learning techniques for tasks such as fitting particle trajectories and understanding the particles involved in the vertex activity. All these methods report promising results and are crucial for improving the reconstruction of the interacting particle kinematics and enhancing the sensitivity to future physics measurements.

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