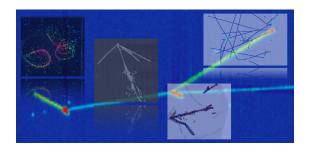
Neutrino Physics and Machine Learning (NPML 2025)



Contribution ID: 49

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

Unsupervised clustering for neutrino event exploration

Friday 31 October 2025 09:40 (15 minutes)

Neutrino interactions are poorly understood and modeled, with some processes entirely missing from simulation. This sometimes leads to to surprising observations from rudimentary data analysis techniques such as hand-scanning. Here, the use of contrastive learning and unsupervised clustering is investigated as a more systematic way to explore event types in data. Although the aim is to investigate unmodeled neutrino interaction mechanisms, this describes a pilot study with cosmic muons as a proof of principle.

Presenter: WILKINSON, Callum

Session Classification: AI/ML for New Physics Search