Open-Source Comparisons for Machine Learning Reconstructions in Neutrino Telescopes

Jeff Lazar ***on behalf of many***

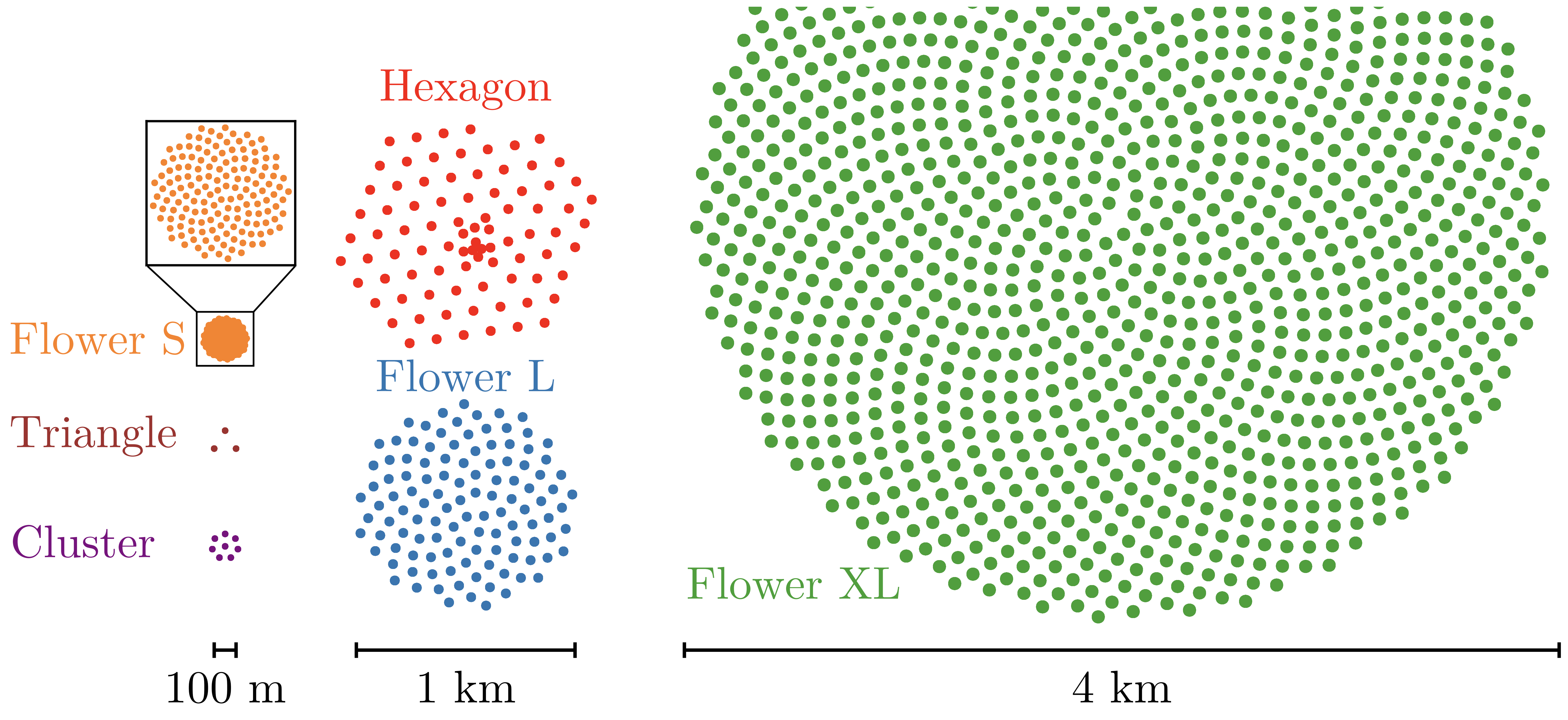
17 Jun., 2025

EuCAIFCon 2025

Cagliari, Sardinia, Italy

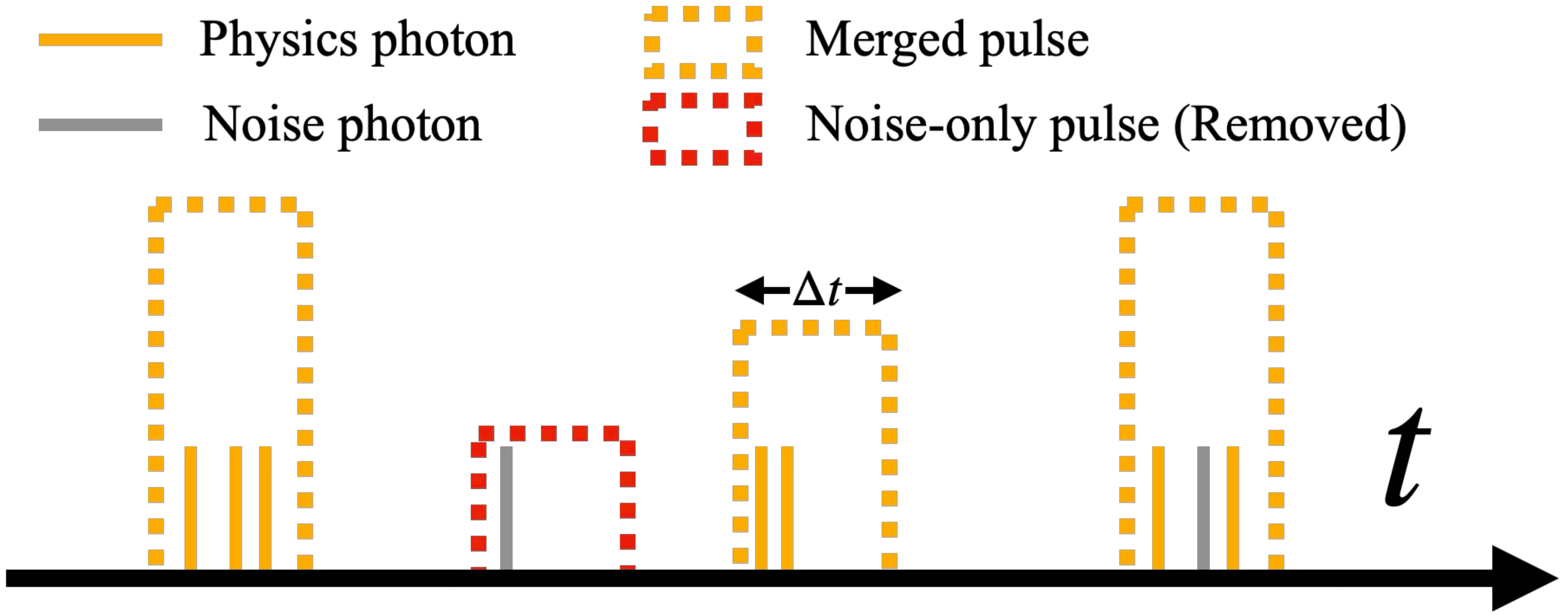
FREEDOM TO RESEARCH

Simulated Datasets

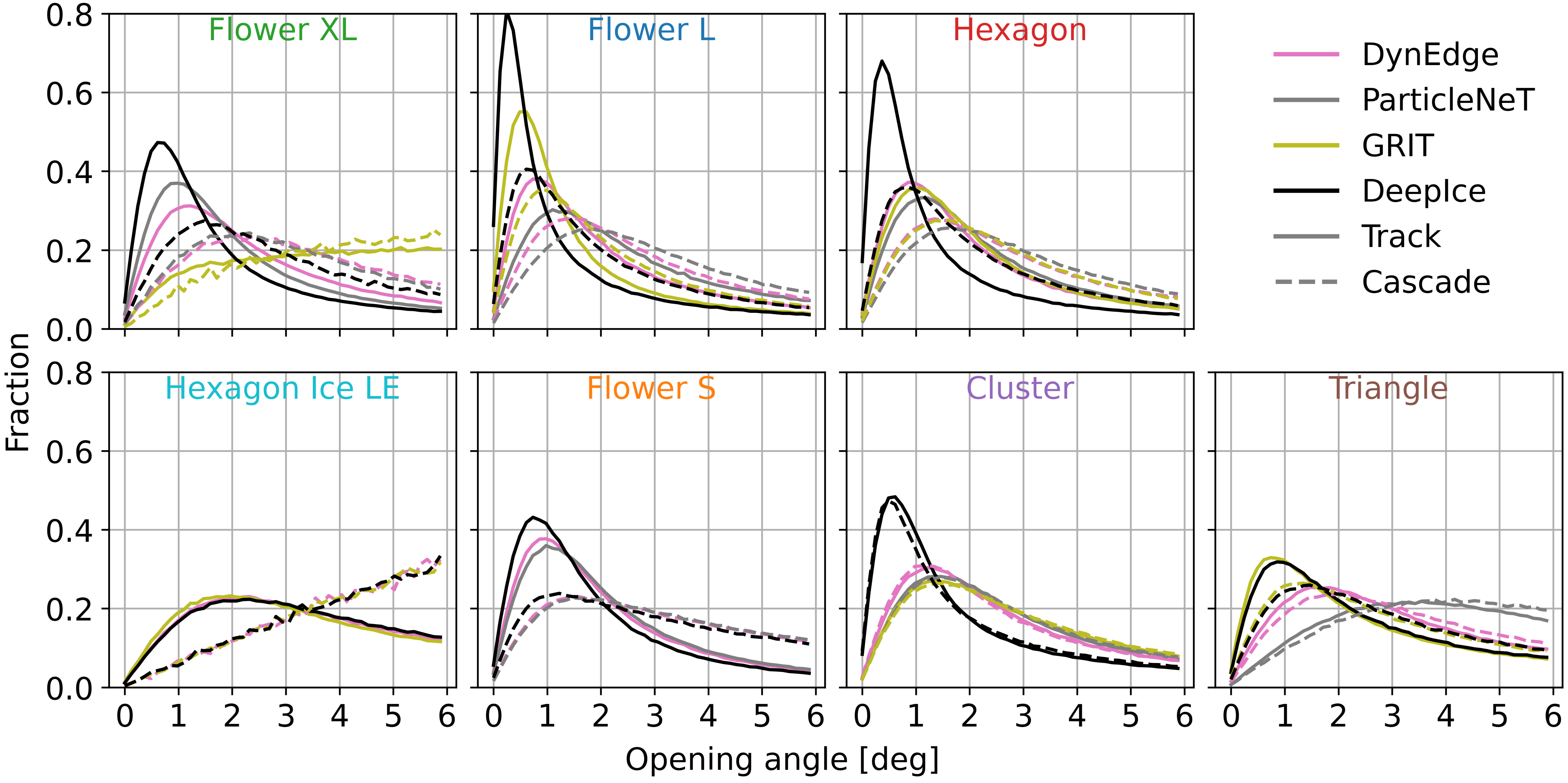


Simulate datasets within a variety of geometries inspired by real-world detectors with `Prometheus` framework

Add noise and merge photons to mimic detector effects



Reconstruction Comparisons



Compare reconstructions on direction, energy, morphology, interaction vertex, and inelasticity across a variety of models with GraphNeT ML framework

Come say hi :-)

Let’s talk about:

- my poster,
- open-source software,
- simulation,
- tau neutrinos,
- steep valleys, or
- Anything else !