BOOST 2024 - 16th International Workshop on Boosted Object Phenomenology, Reconstruction, Measurements, and Searches at Colliders

Contribution ID: 73

Type: Talk

Semi-visible jets, energy-based models, and self-supervision

Wednesday, 31 July 2024 12:20 (20 minutes)

We present DarkCLR, a novel framework for detecting semi-visible jets at the LHC. DarkCLR uses a selfsupervised contrastive-learning approach to create observables that are approximately invariant under relevant transformations. We use background-enhanced data to create a sensitive representation and evaluate the representations using a normalized autoencoder as a density estimator. Our results show a remarkable sensitivity for a wide range of semi-visible jets and are more robust than a supervised classifier trained on a specific signal.

Primary authors: RÜSCHKAMP, Jan; FAVARO, Luigi (ITP - University of Heidelberg); KRÄMER, Michael (RWTH Aachen); MODAK, Tanmoy (Heidelberg University); PLEHN, Tilman

Presenter: FAVARO, Luigi (ITP - University of Heidelberg)

Session Classification: BSM

Track Classification: BSM