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Anomaly detections in 3 lepton channel using AutoEncoders

The use of autoencoders for anomaly detection has been extended to many fields of science. Their application in high energy physics is particularly relevant, as a trained model can be used to identify experimental failures, data fluctuations, or—most interestingly—signs of new physics phenomena. In this study, we focus on analyzing event topologies with three leptons, aiming to identify potential signal processes. Specifically, we consider a signal W′ boson decaying into a WZ pair, resulting in a final state with three leptons and a neutrino ($\ell\ell\ell\nu$), while taking into account Standard Model background processes. The framework for data processing, model training, and preliminary results will be discussed.

Would you like to be considered for an oral presentation?

Yes

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