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Search for New Physics with unsupervised Machine Learning

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The Stnadard Model of particle physics is the model that best describe our current knowledge of elementary particles and their interactions. However, it can't explain everything. For this reason, experiments like ATLAS tries to find the constituents of New Physics beyond the Standard Model.

In order to analyse the data produced by these experiments, Machine Learning is a very popular tool. This talk will present a new way to search for New Physics combining an anomaly detection algorithm based on unsupervised Machine Learning and a model independent bump hunting tool. A concrete example of application will be given using the data from the LHC Olympics 2020 challenge[1].

[1] https://lhco2020.github.io/homepage/

Auteur principal: VASLIN, Louis (LPC Clermont)

Orateur: VASLIN, Louis (LPC Clermont)

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