Contribution ID: **789** Contribution code: **contribution ID 789**   Type: **not specified**

Unsupervised Machine Learning for New Physics Searches

Friday 3 December 2021 16:50 (30 minutes)

In the absence of new physics signals and in the presence of a plethora of new physics scenarios that could hide in the copiously produced LHC collision events, unbiased event reconstruction and classification methods have become a major research focus of the high-energy physics community. Unsupervised machine learning methods, often used as anomaly-detection methods, are trained on Standard Model processes and should indicate if a collision event is irreconcilable with the kinematic features of Standard Model events. I will briefly review popular unsupervised neural network methods proposed for the analysis of high-energy physics collision events. Further, I will discuss how physics principles can guide such methods and how their susceptibility to systematic uncertainties can be curbed.

Speaker time zone

References

Significance

Presenter: SPANNOWSKY, Michael (University of Durham (GB))

Session Classification: Plenary