

BDT as a Surrogate Model

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I will present the reinterpretation material of the CalRatio + X ATLAS analysis (arXiv:2407.09183). The analysis focuses on neutral long-lived particles decaying within the ATLAS hadronic calorimeter. The reinterpretation involves a Boosted Decision Tree (BDT) trained on truth-level variables to estimate the probability of events within the ABCD plane and assess the sensitivity of the analysis. The BDT weights, along with a Python code example, are available on HEPData to ensure reproducibility. Additionally, I will discuss how this method can be extended to other analyses, providing guidance for broader applications.

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Session Classification: Open Data and experiment(-related) contributions