CMS Physics Object & Data Analysis School (PO&DAS) 2023



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B-tagging and vertexing

Wednesday 11 October 2023 13:45 (2 hours)

The BTV exercise aims to demonstrate the concept of flavor tagging and its usage in analyses. The first part of this exercise will cover the fundamental principle of b tagging, starting with understanding the discrimination power of the inputs to the tagging algorithm and is continued by evaluating the performance of the trained model.

The second part of this exercise will be dedicated to the calibration of the b-tagger to handle differences between data and simulation. It will introduce one of the currently used methods for calibrating the full shape of the b-tagging discriminant and focus on the derivation of the correction and its application in analysis. Both exercises are based on a purely pythonic and columnar analysis workflow, in which you will be able to study the inputs and performance of the b-tagging algorithm by evaluating general machine learning performance metrics. In the second workflow, you will examine the agreement between data and simulation before and after the calibration, as well as implement the calibration itself with a special treatment of the jet flavors.

Presenters: WUCHTERL, Sebastian (CERN); DIEKMANN, Svenja **Session Classification:** POG exercises