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TMVA - Toolkit for Multivariate Data Analysis in ROOT

Given the ever-increasing complexity of modern HEP data analysis, multivariate analysis techniques have proven an indispensable tool in extracting the most valuable information from the data. TMVA, the Toolkit for Multivariate Data Analysis, provides a large variety of advanced multivariate analysis techniques for both signal/background classification and regression problems. In TMVA, all methods are embedded in a user-friendly framework capable of handling the pre-processing of the data as well as the evaluation of the results, thus allowing for a simple use of even the most sophisticated multivariate techniques. Convenient assessment and comparison of different analysis techniques enable the user to choose the most efficient approach for any particular data analysis task. TMVA is an integral part of the ROOT data analysis framework and is widely-used in the LHC experiments. In this talk I will review recent developments in TMVA, discuss typical use-cases in HEP and present the performance of our most important multivariate techniques on example data by comparing it to theoretical performance limits.

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