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Application of Multivariate Analysis in Separation of Higgs Boson Signal at future e^+e^- colliders

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Even the environment at future e^+e^- colliders is practically QCD background free, there is a large number of processes with high cross-sections and/or similar topology as the Higgs signal. Minimization of the statistical uncertainty calls for optimized event selection w.r.t. the statistical significance. This is where the Multivariate Analysis (MVA) is employed, separating the signal from multiple backgrounds on the basis of their kinematical and event shape properties. In this poster we discuss the concept of MVA, its application and evaluation of the performance, on example of a Higgs two-photon decay at CLIC.

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