TMVA: BDT trained on RecoTk1IP from simulated ttbar samples

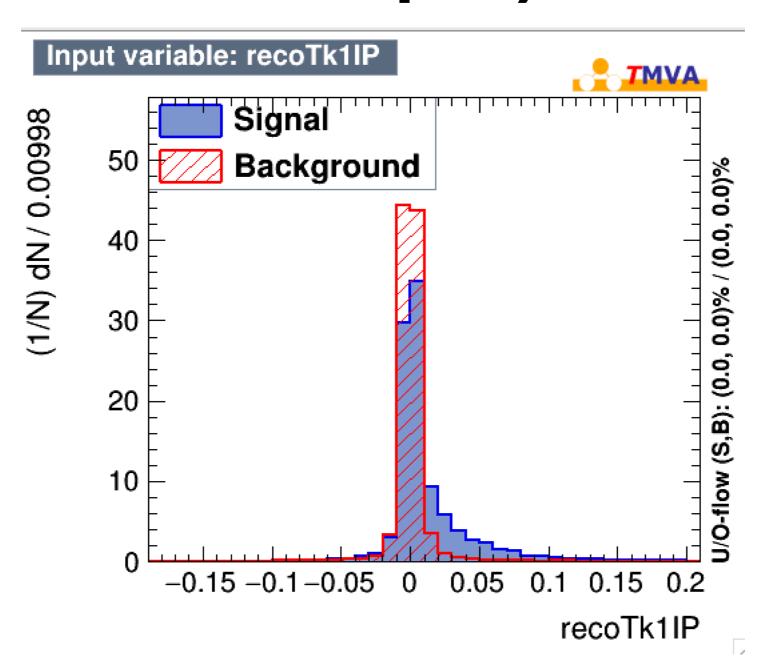
Aug 3, 2018

All plots were generated using the TMVA GUI (one click of a button!)

This slideshow just demonstrates how some of these plots look, for a BDT trained only on Track 1 2D IP.

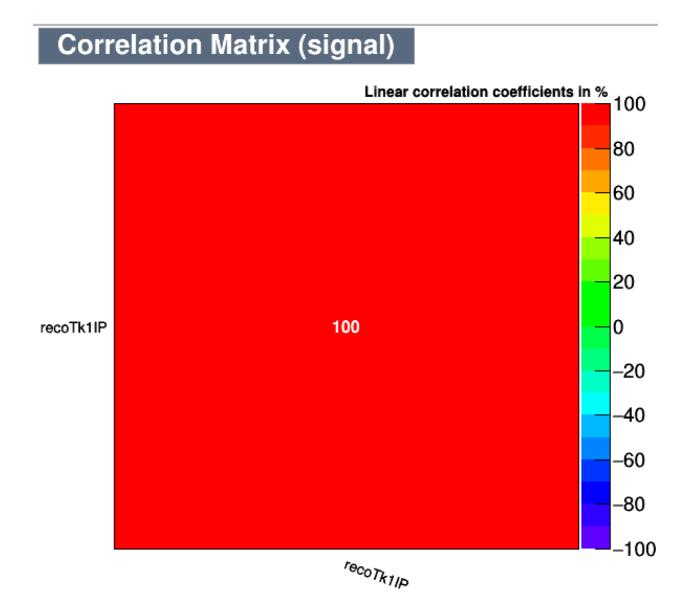
	TMVA Plotting Macros for Classification
	(1a) Input variables (training sample)
	(2a) Input variable correlations (scatter profiles)
	(3) Input Variable Linear Correlation Coefficients
	(4a) Classifier Output Distributions (test sample)
(4	b) Classifier Output Distributions (test and training samples superimposed)
	(4c) Classifier Probability Distributions (test sample)
	(4d) Classifier Rarity Distributions (test sample)
	(5a) Classifier Cut Efficiencies
	(5b) Classifier Background Rejection vs Signal Efficiency (ROC curve)
	(5b) Classifier 1/(Backgr. Efficiency) vs Signal Efficiency (ROC curve)
	(6) Parallel Coordinates (requires ROOT-version >= 5.17)
	(7) PDFs of Classifiers (requires "CreateMVAPdfs" option set)
	(8) Likelihood Reference Distributiuons
	(9a) Network Architecture (MLP)
	(9b) Network Convergence Test (MLP)
	(10) Decision Trees (BDT)
	(11) Decision Tree Control Plots (BDT)
	(12) Plot Foams (PDEFoam)
	(13) General Boost Control Plots
	(14) Quit

1(a) Input variables (training sample)



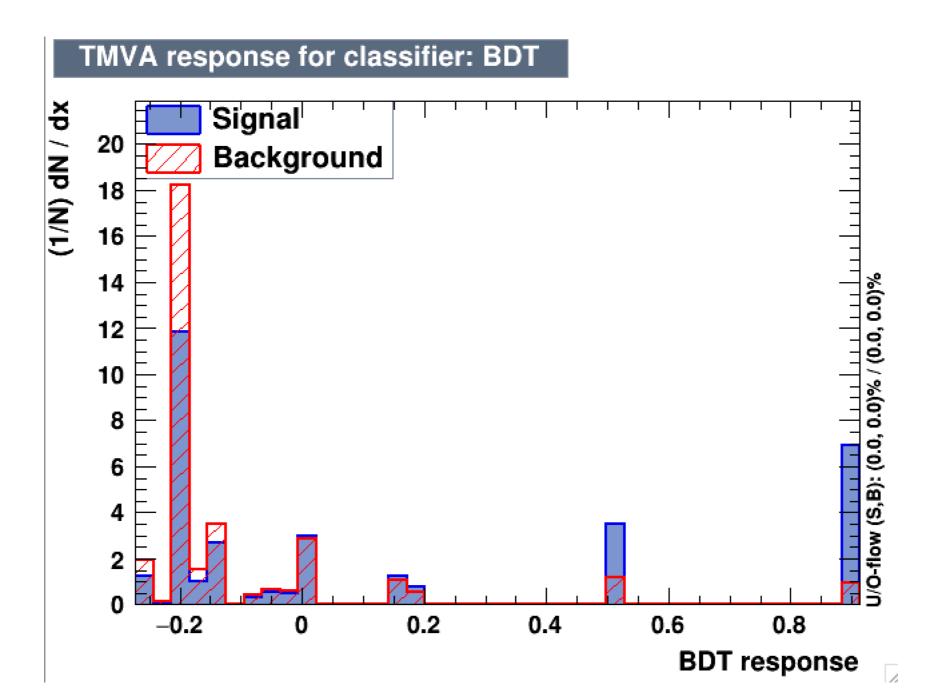
(3) Input Variable Linear Correlation Coefficients

Only one input variable: correlation coefficients are N/A



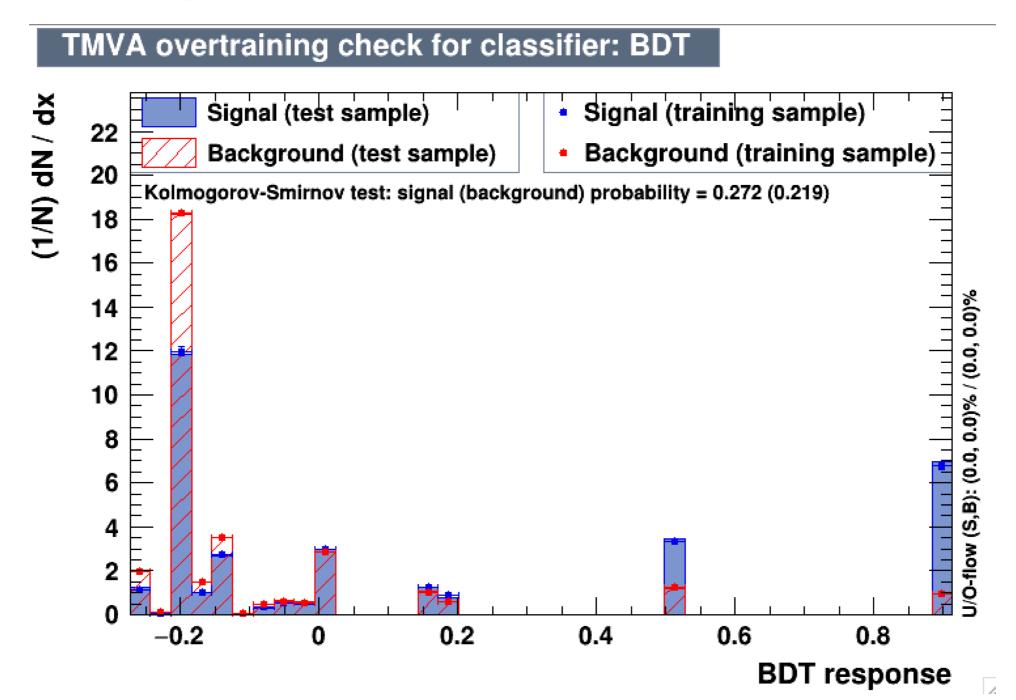
(4a) Classifier Output Distributions (test sample)

More signal events have a higher BDT classifier value as expected

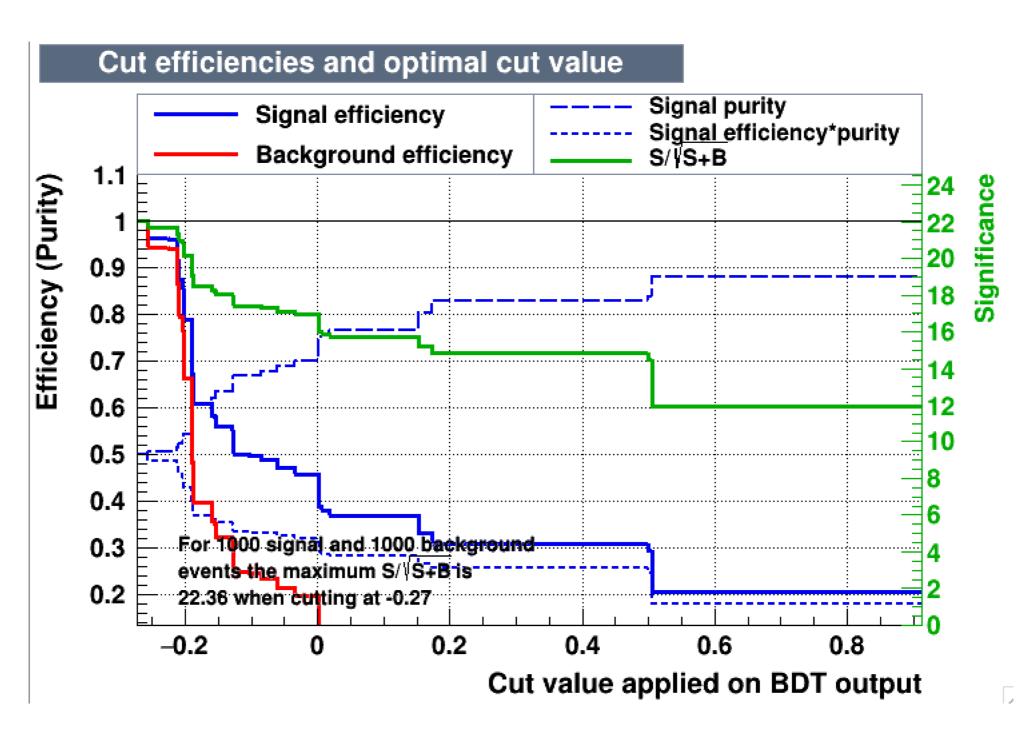


(4b) Classifier Output Distributions (test and training samples superimposed)

 A warning sign of overtraining is when the training/test BDT responses don't match up

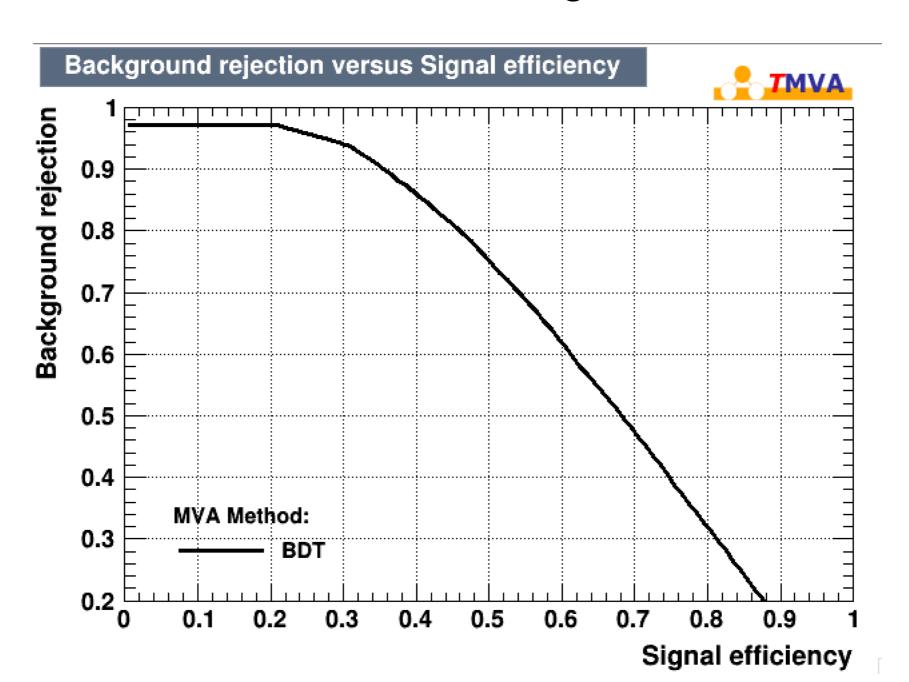


(5a) Classifier Cut Efficiencies



(5b) Classifier Background Rejection vs Signal Efficiency (ROC curve)

More detailed metrics are in the logRun file

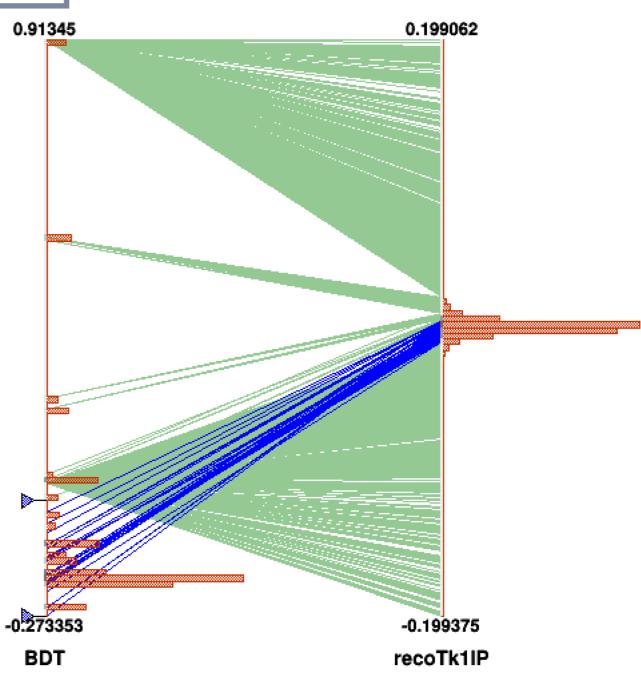


(6) Parallel Coordinate representation

BDT:recoTk1IP{classID==1}

 Mapping of recoTk1IP values to BDT discriminator

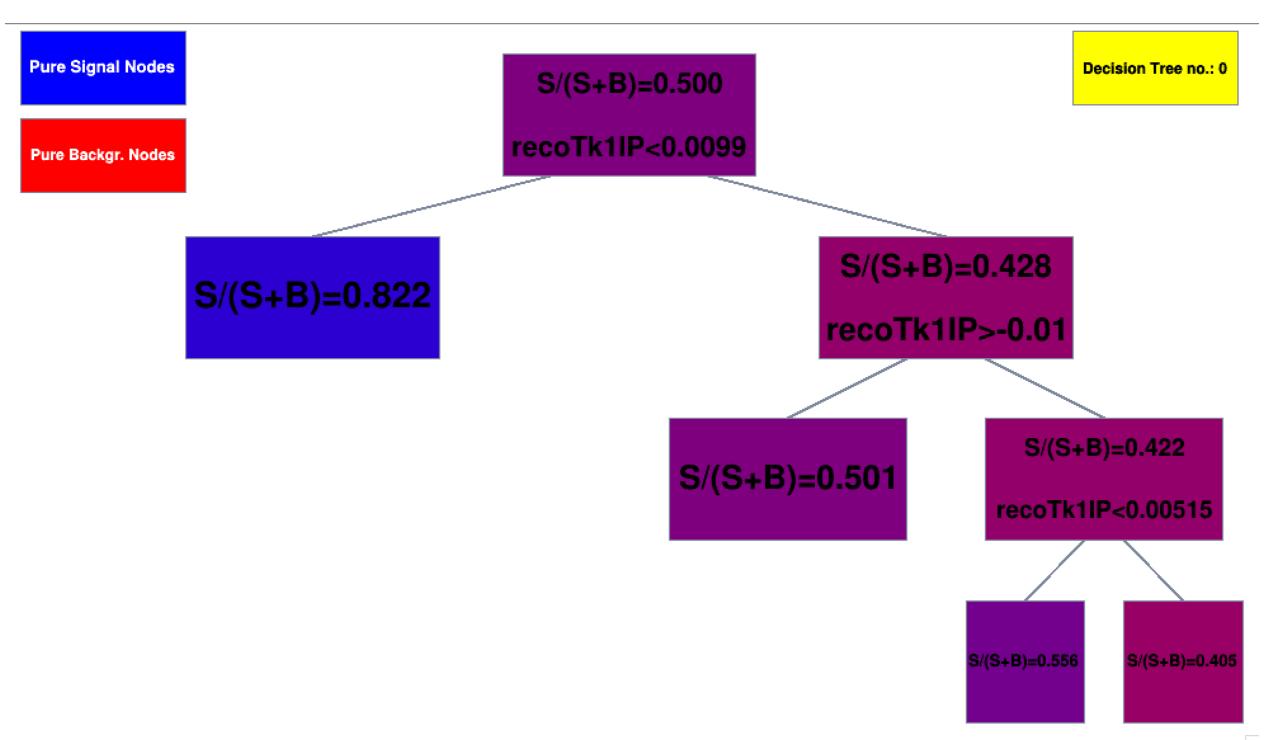
 This gave me a segfault when I clicked on it :(



(7) PDFs of Classifiers (requires "CreateMVAPdfs" option set)

(Still trying to set "CreateMVAPDFs" option)

(10) Decision Trees (BDT)



(11) Decision Tree Control Plots (BDT)

got segfault when I ran this