

- Comparison between significance obtained using network histograms in the merged regime after two different events selection:

1) SRs + ZCRs

2) preselection requirements on lepton + jet p_T :

Pass_SFLeptons == True and Pass_Trigger == True and Pass_FatJet == True and
fatjet_pt > 200 and lep1_pt > 30 and lep2_pt > 30 and
Pass_W(Z)TaggerSubStructCutLP == True (W for HVT, Z for Radion, RSG)

- For significance plots cut on signal mass < 6 TeV

Yields

	Radion		RSG	
Regime	SRs + ZCRs	Preselection	SRs + ZCRs	Preselection
Merged ggF	772.9	1418.1	527.4	759.9
Merged VBF	547.5	758.3	310.2	539.6

	HVT		Background	
Regime	SRs + ZCRs	Preselection	SRs + ZCRs	Preselection
Merged ggF	640.6	958.9	87685.1	280086.5
Merged VBF	145.2	233.9	2488.7	5583.8

SIGNIFICANCE COMPARISON

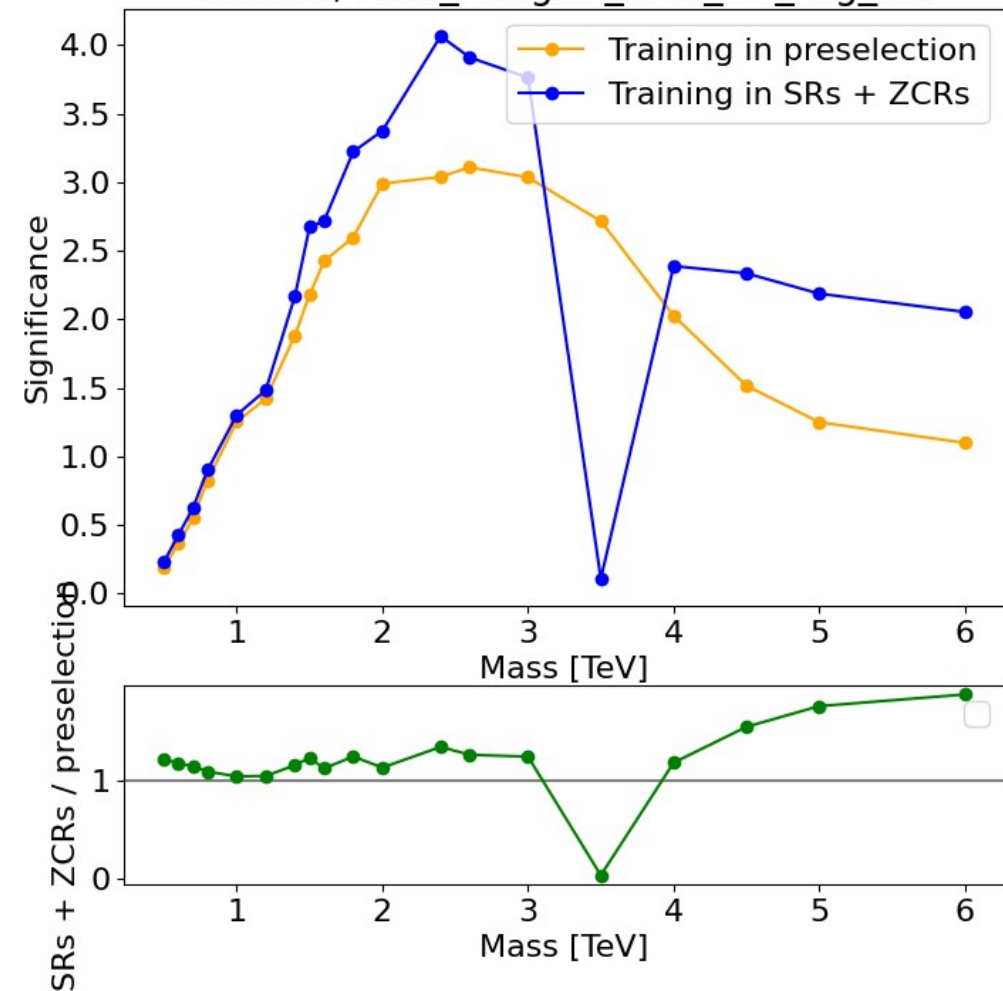
Plots in

/nfs/kloe/einstein4/HDBS/Nnoutput/r33-22/UFO_PFLOW/none/\$regime/

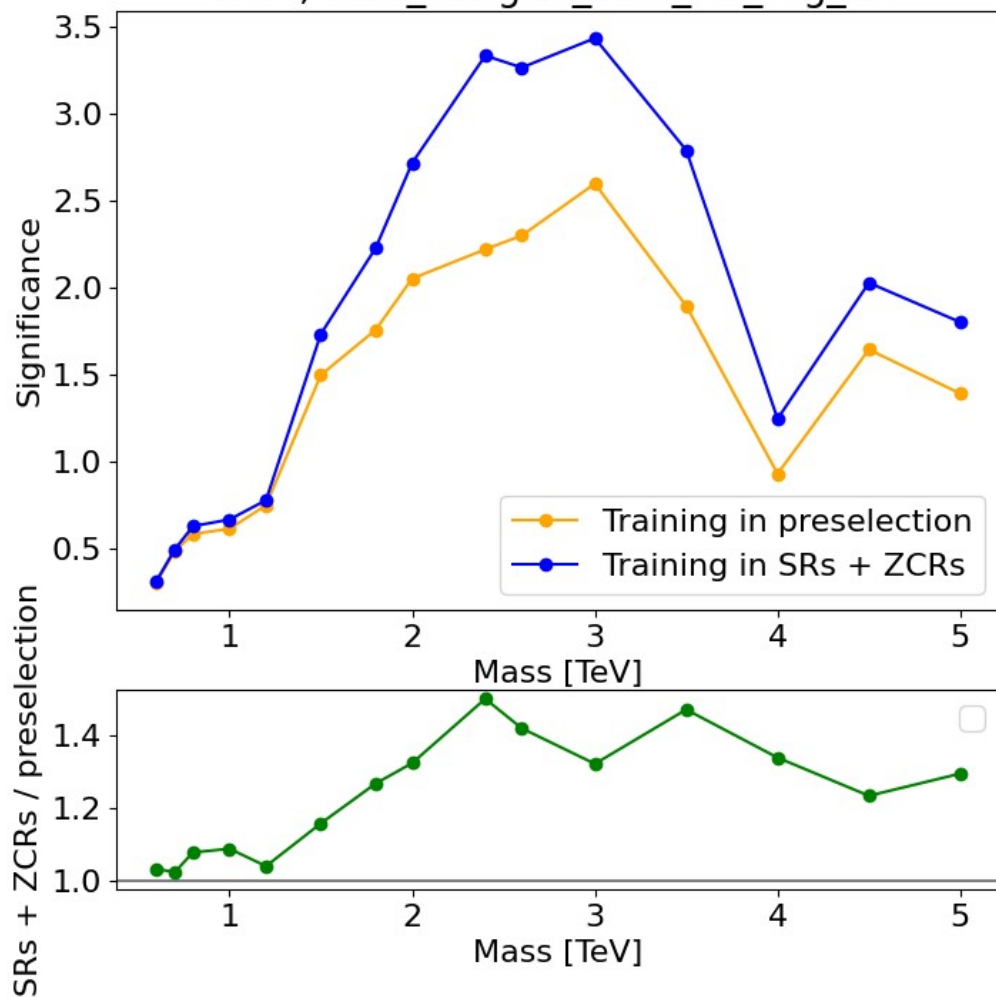
e.g.:

/nfs/kloe/einstein4/HDBS/NNoutput/r33-22/UFO_PFLOW/none/Pass_MergLP_GGF_WZ_SR/
significanceComparisonSRvsZCR_r33-
22_UFO_PFLOW_none_HVTWZ_all_Pass_MergLP_GGF_WZ_SR.png

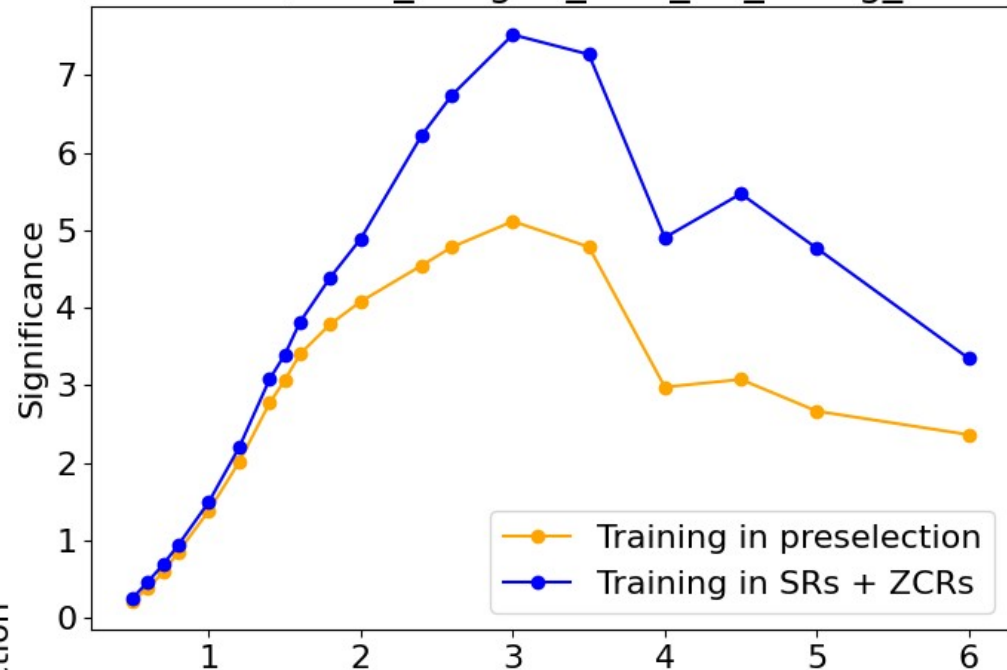
Radion, Pass_MergHP_GGF_ZZ_Tag_SR



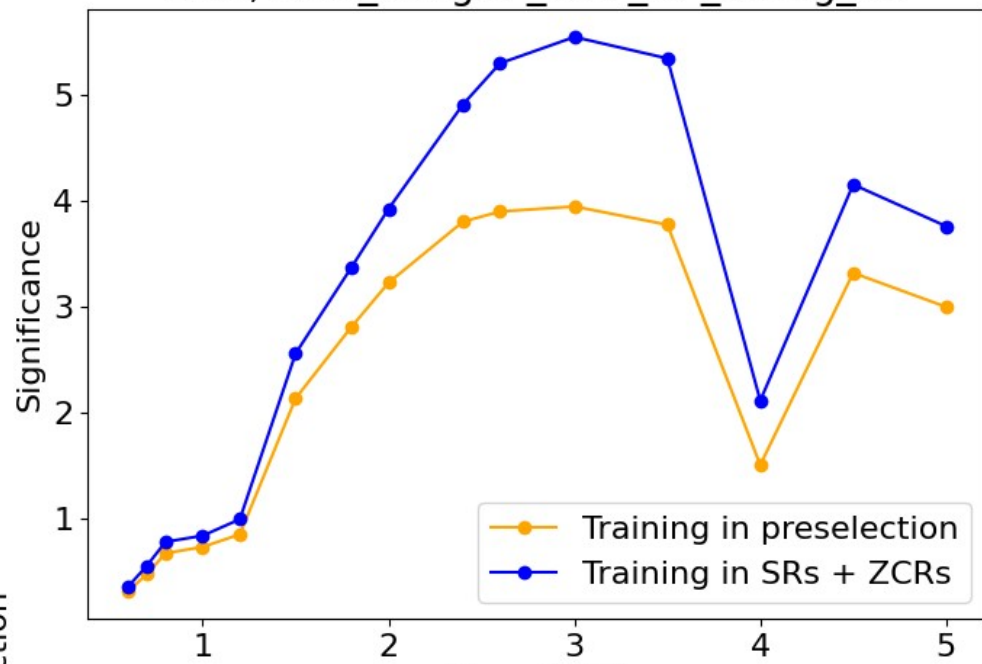
RSG, Pass_MergHP_GGF_ZZ_Tag_SR



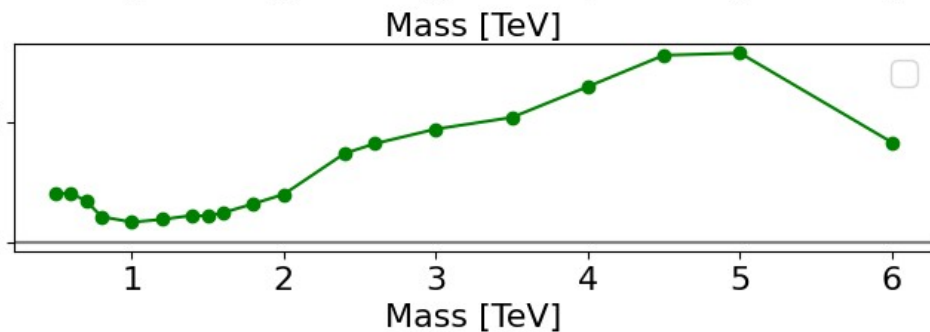
Radion, Pass_MergHP_GGF_ZZ_Untag_SR



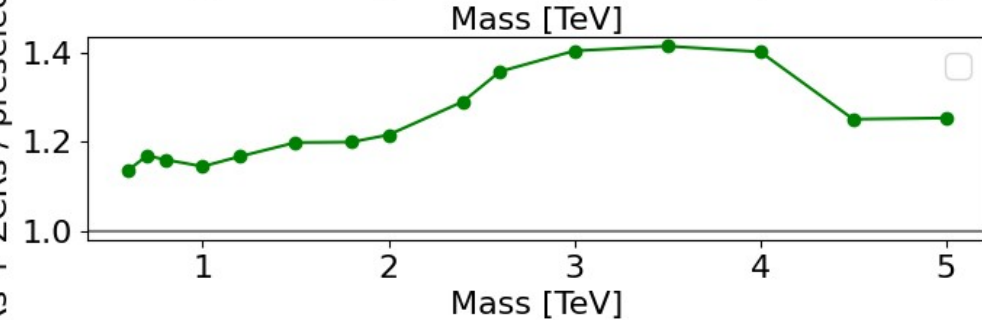
RSG, Pass_MergHP_GGF_ZZ_Untag_SR



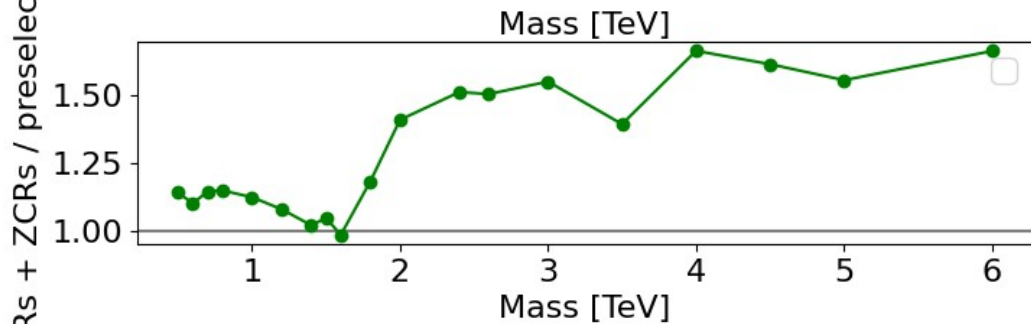
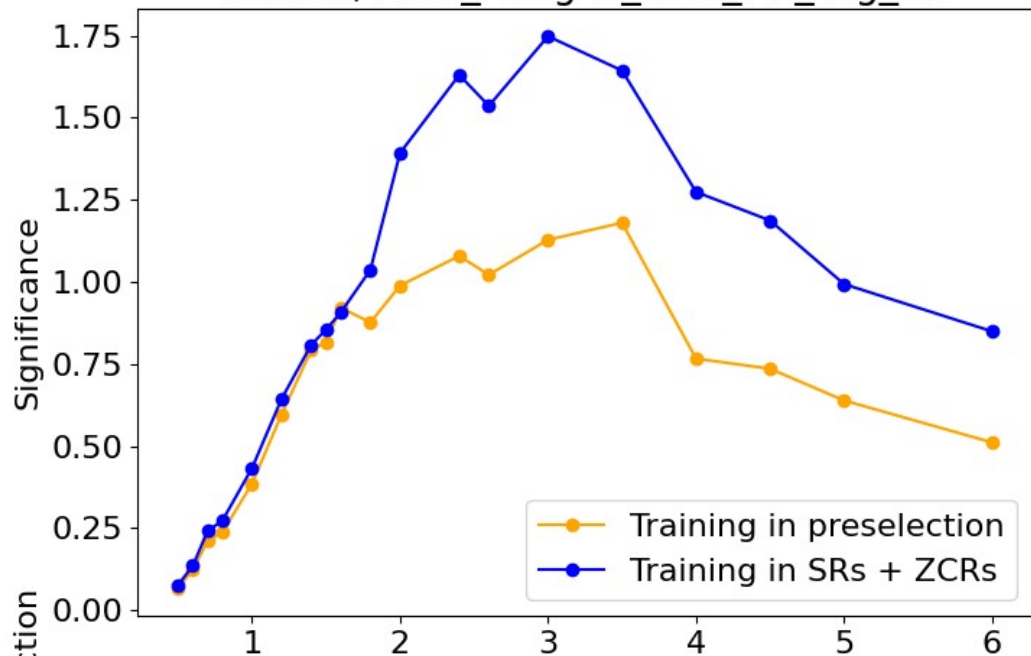
SRs + ZCRs / preselection



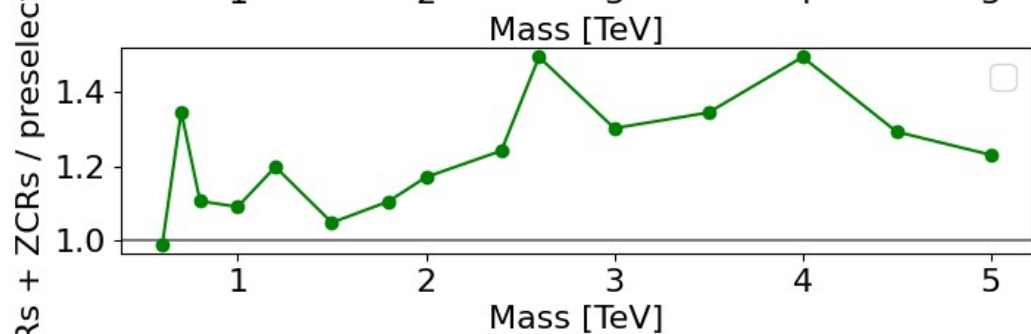
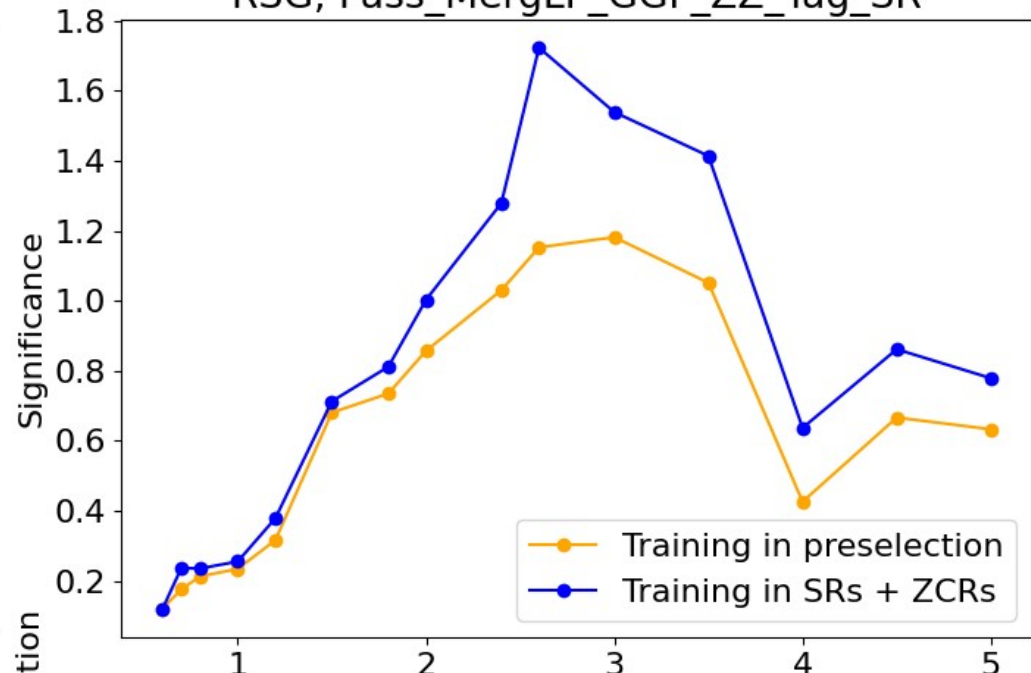
SRs + ZCRs / preselection



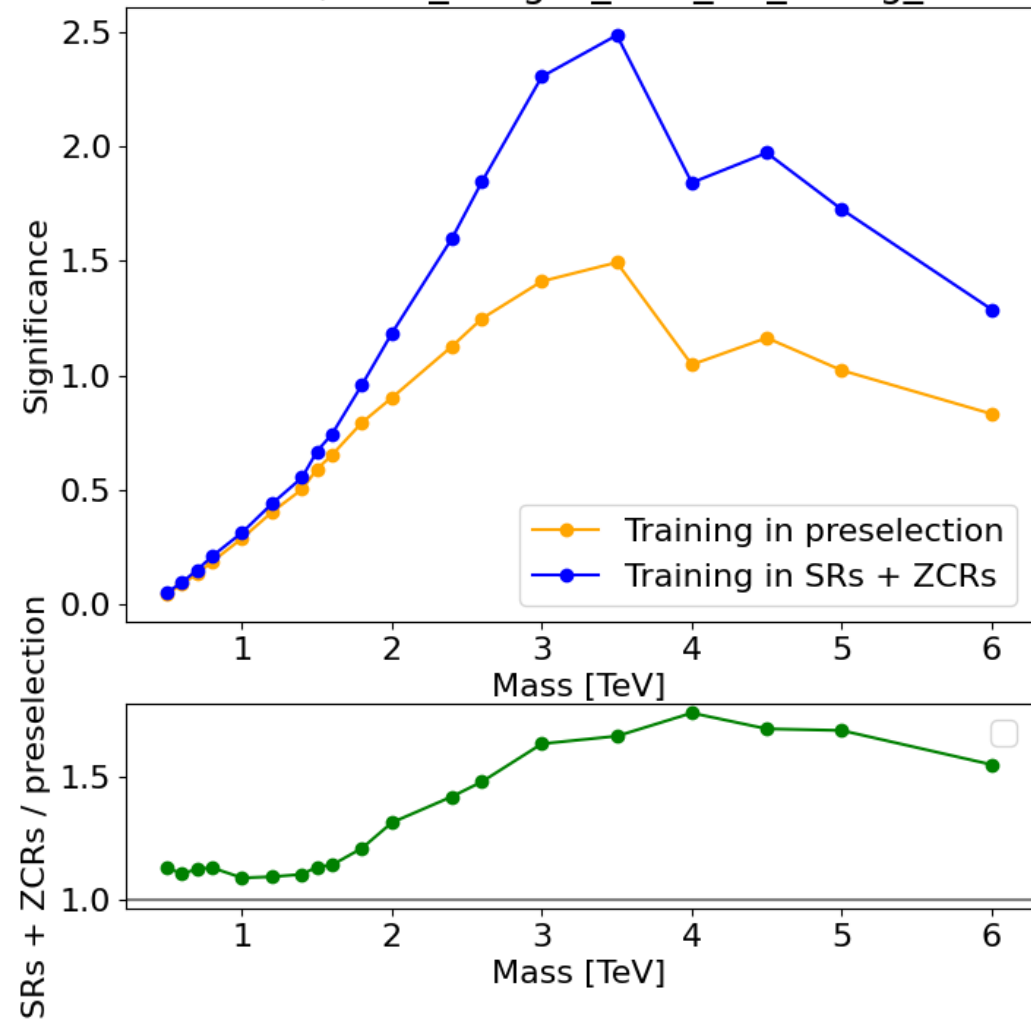
Radion, Pass_MergLP_GGF_ZZ_Tag_SR



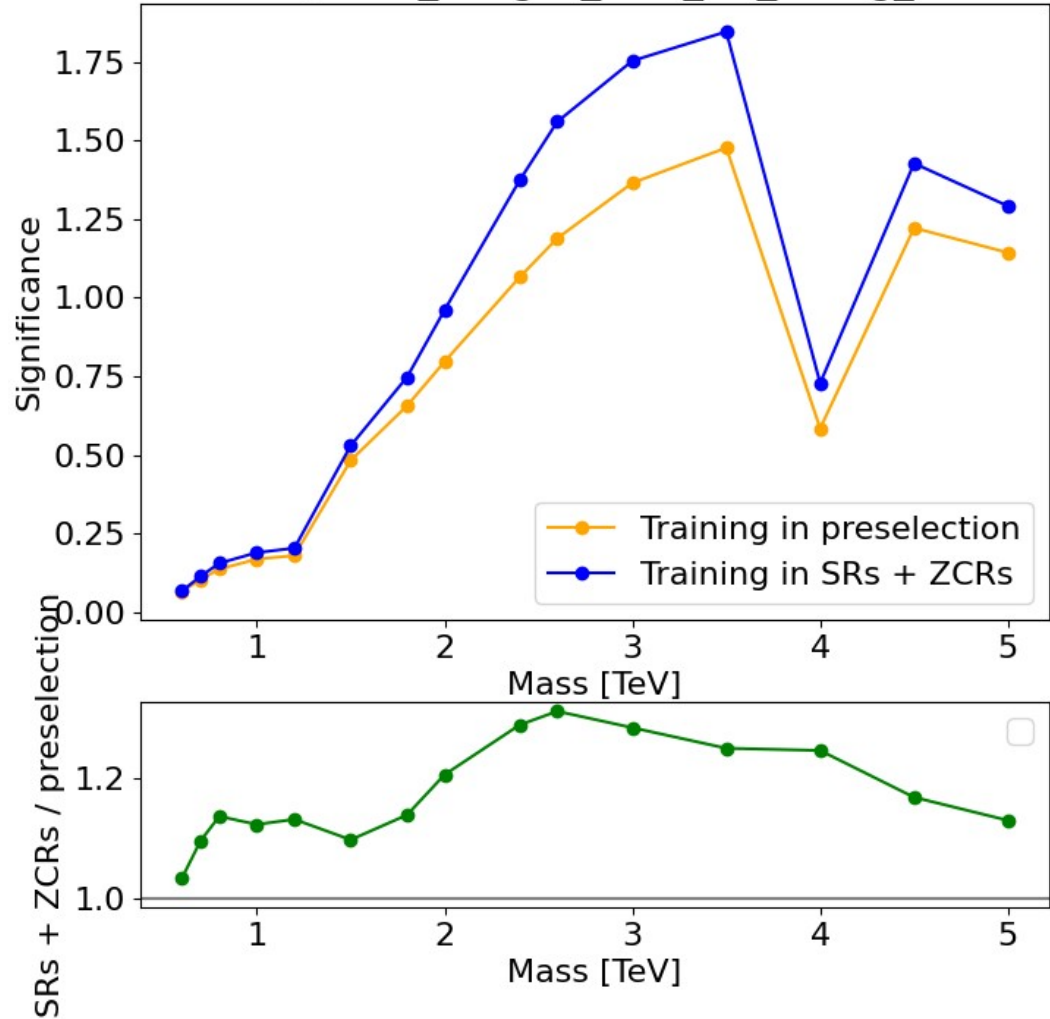
RSG, Pass_MergLP_GGF_ZZ_Tag_SR



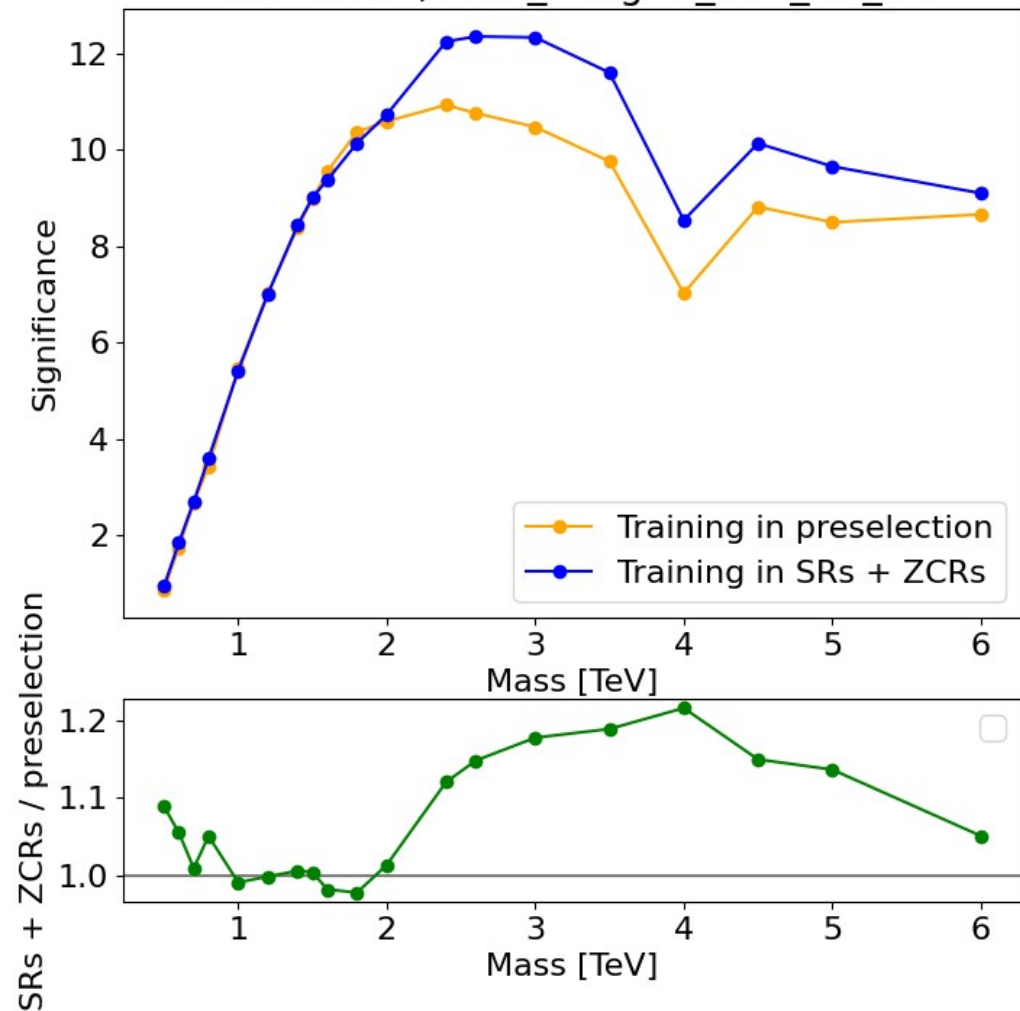
Radion, Pass_MergLP_GGF_ZZ_Untag_SR



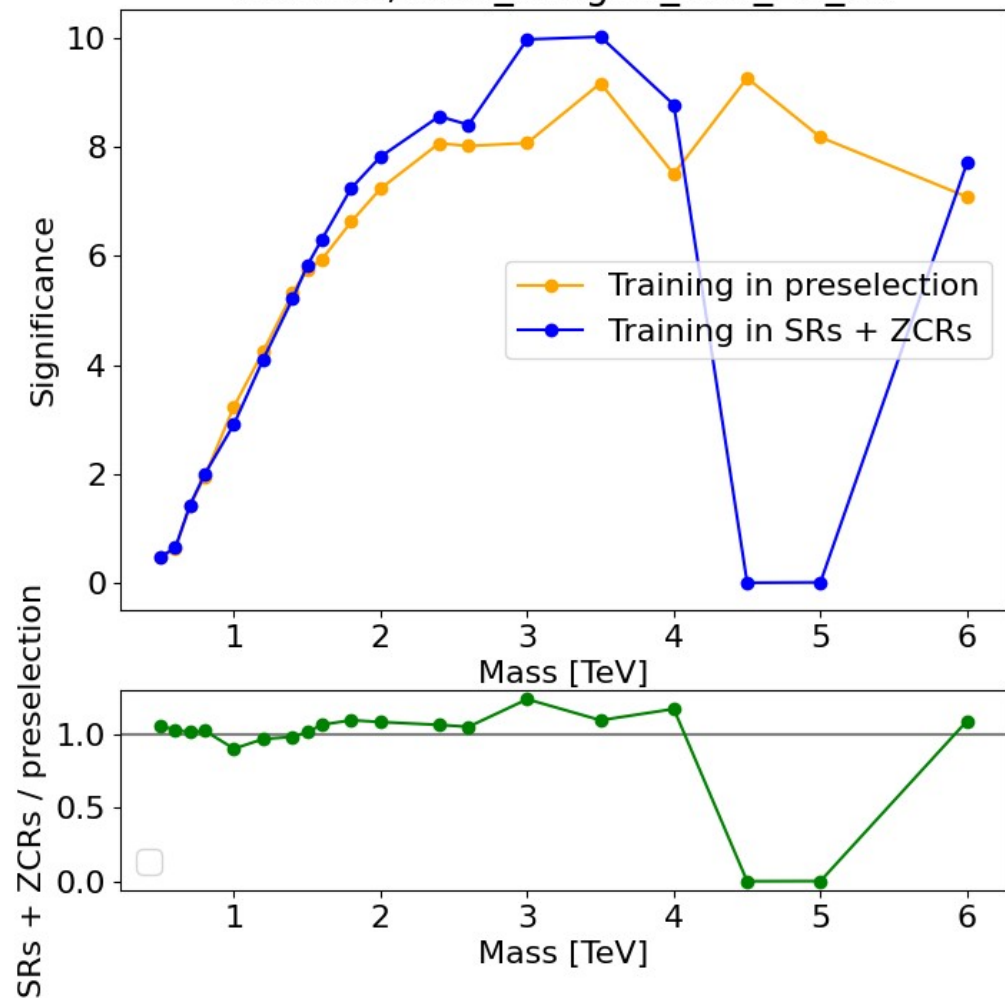
RSG, Pass_MergLP_GGF_ZZ_Untag_SR



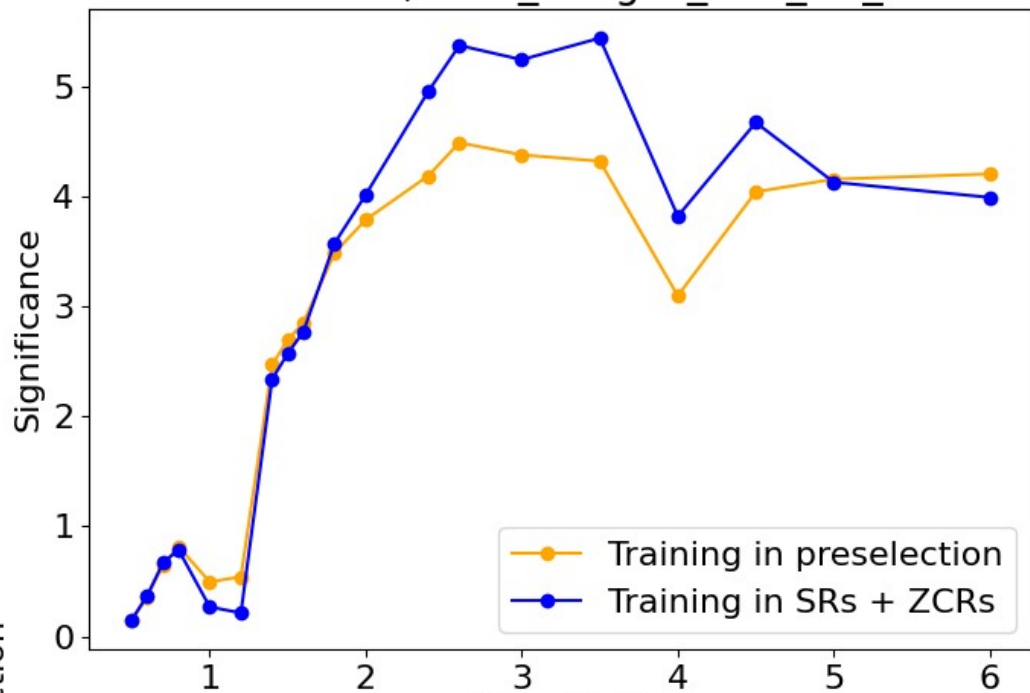
VBFRadion, Pass_MergHP_VBF_ZZ_SR



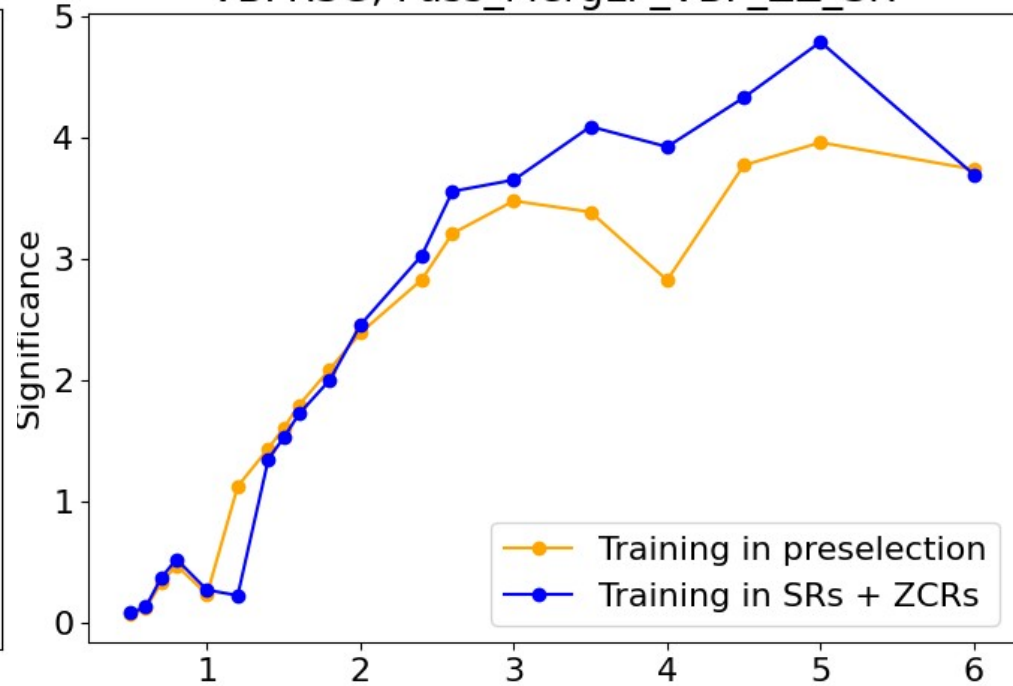
VBFRSG, Pass_MergHP_VBF_ZZ_SR



VBFRadion, Pass_MergLP_VBF_ZZ_SR

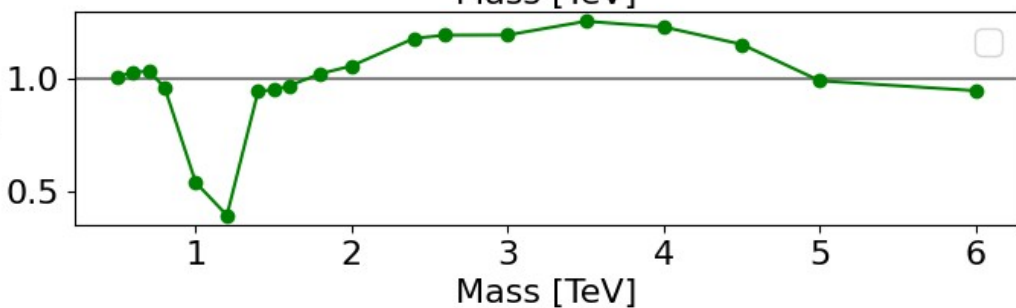


VBFRSG, Pass_MergLP_VBF_ZZ_SR



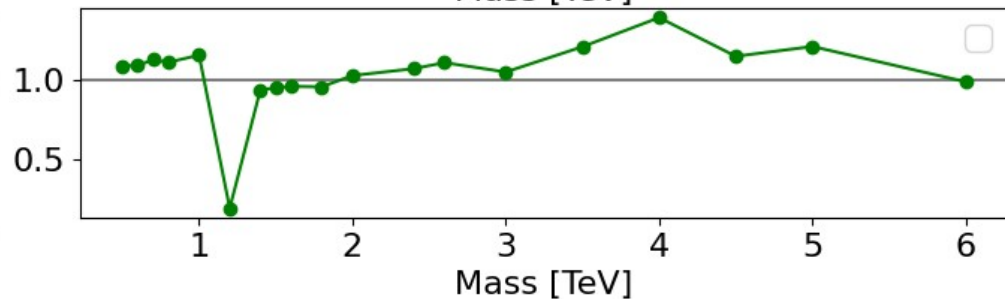
SRs + ZCRs / preselection

Mass [TeV]



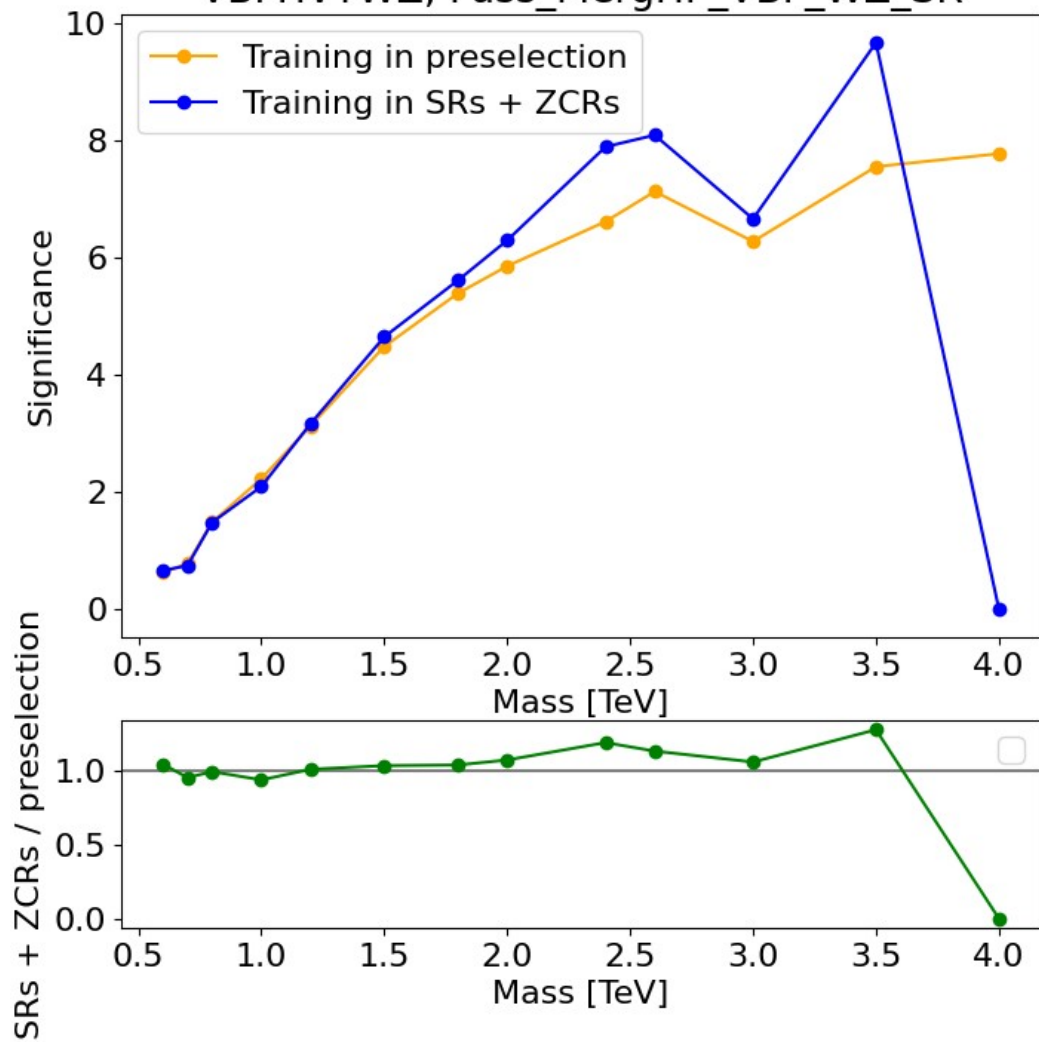
Mass [TeV]

Mass [TeV]

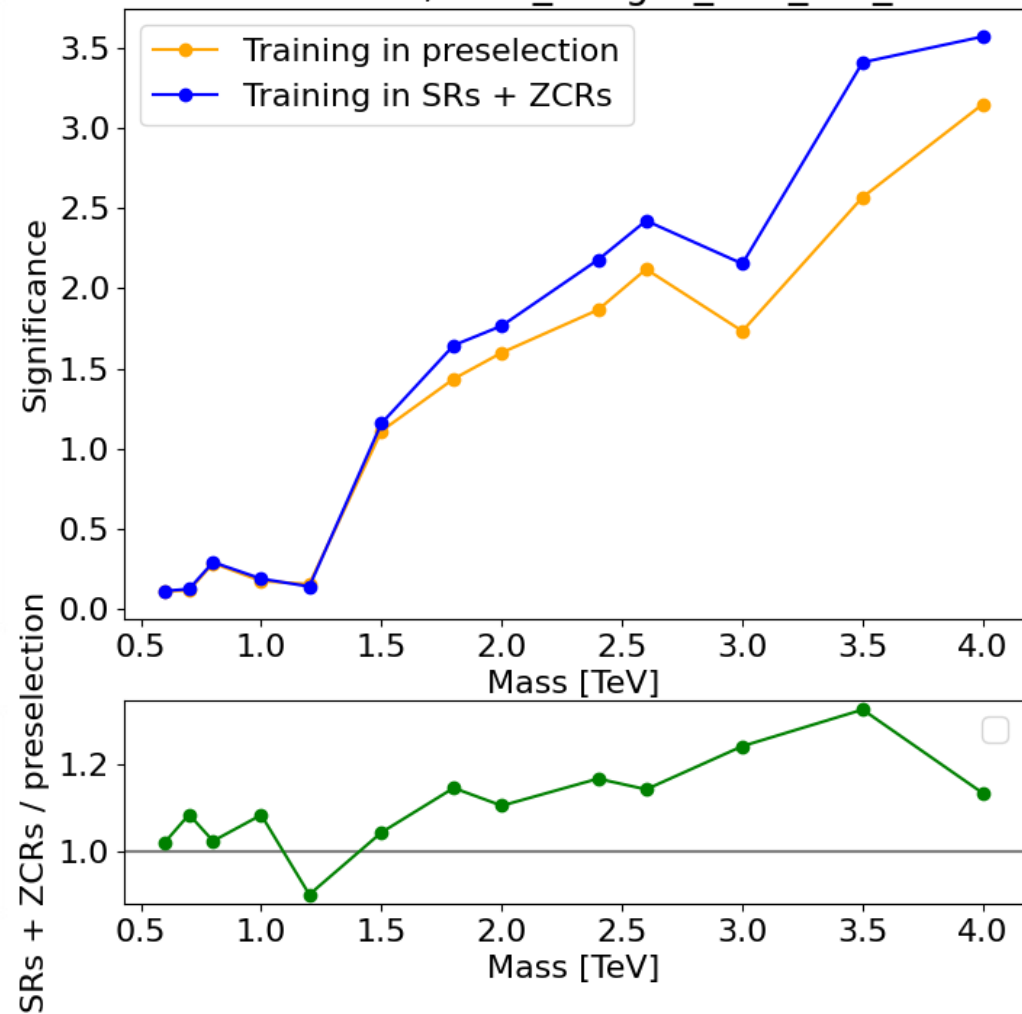


Mass [TeV]

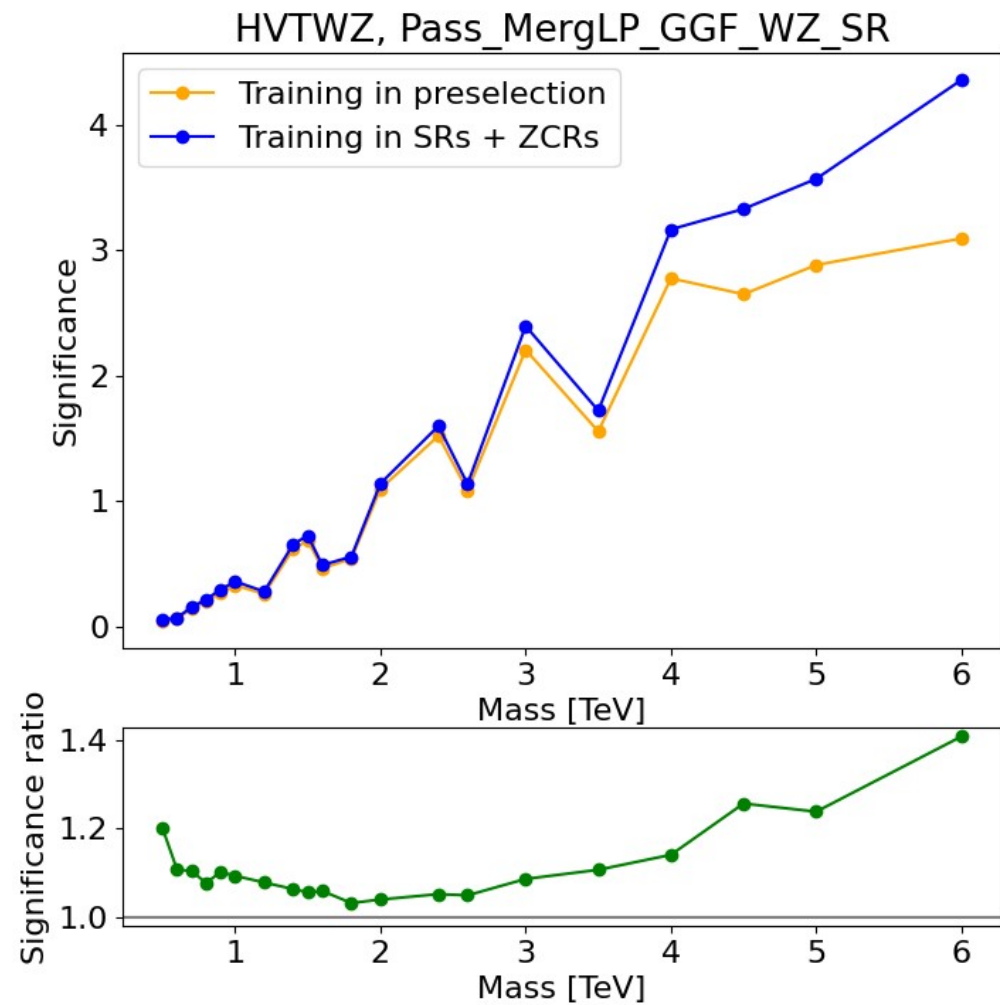
VBFHVTWZ, Pass_MergHP_VBF_WZ_SR



VBFHVTWZ, Pass_MergLP_VBF_WZ_SR



Division by 0



LOSS COMPARISON

- Plots for SRs + ZCRs in

/nfs/kloe/einstein4/HDBS/NNoutput/r33-22/UFO_PFLOW/\$region/\$channel/none/\$signal/all/
PDNN/

e.g.:

/nfs/kloe/einstein4/HDBS/NNoutput/r33-22/UFO_PFLOW/merged/ggF/none/Radion/all/PDNN/
Loss_PDNN_UFO_PFLOW_merged_ggF_none_Radion_all.png

- Plots for preselection in

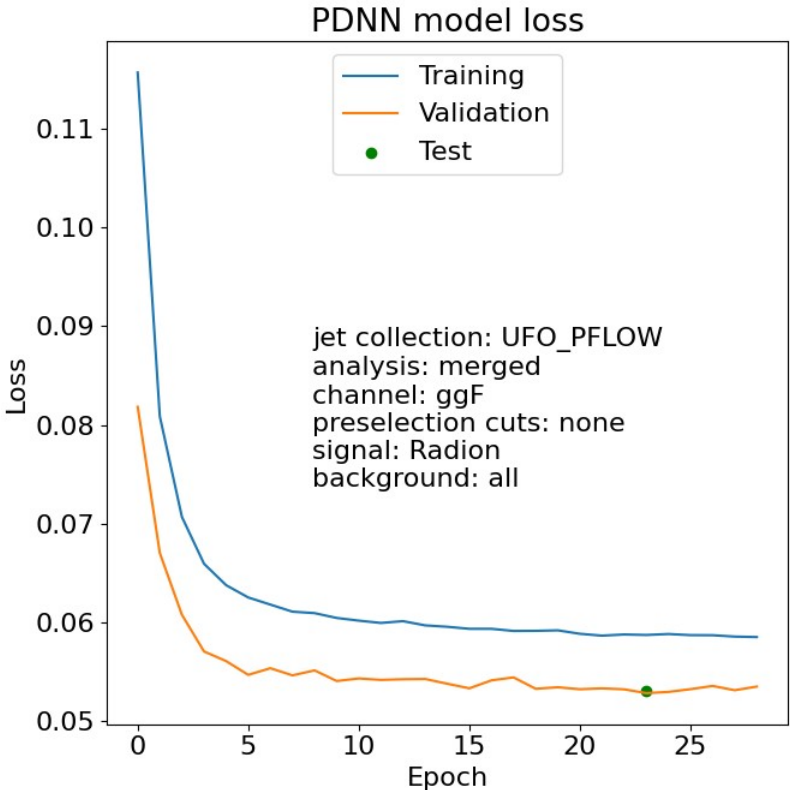
/nfs/kloe/einstein4/HDBS/NNoutput/r33-22/UFO_PFLOW/\$region/\$channel/
looseEventsSelection/\$signal/all/PDNN/

e.g.:

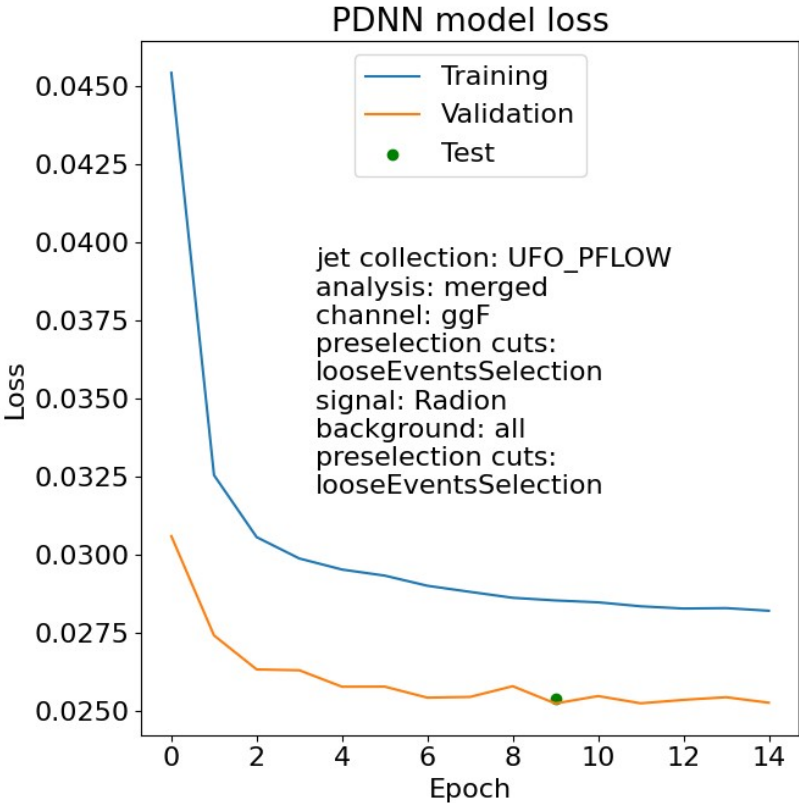
/nfs/kloe/einstein4/HDBS/NNoutput/r33-22/UFO_PFLOW/merged/ggF/looseEventsSelection/
Radion/all/PDNN/
Loss_PDNN_UFO_PFLOW_merged_ggF_looseEventsSelection_Radion_all.png

Merged ggF Radion

SRs + ZCRs



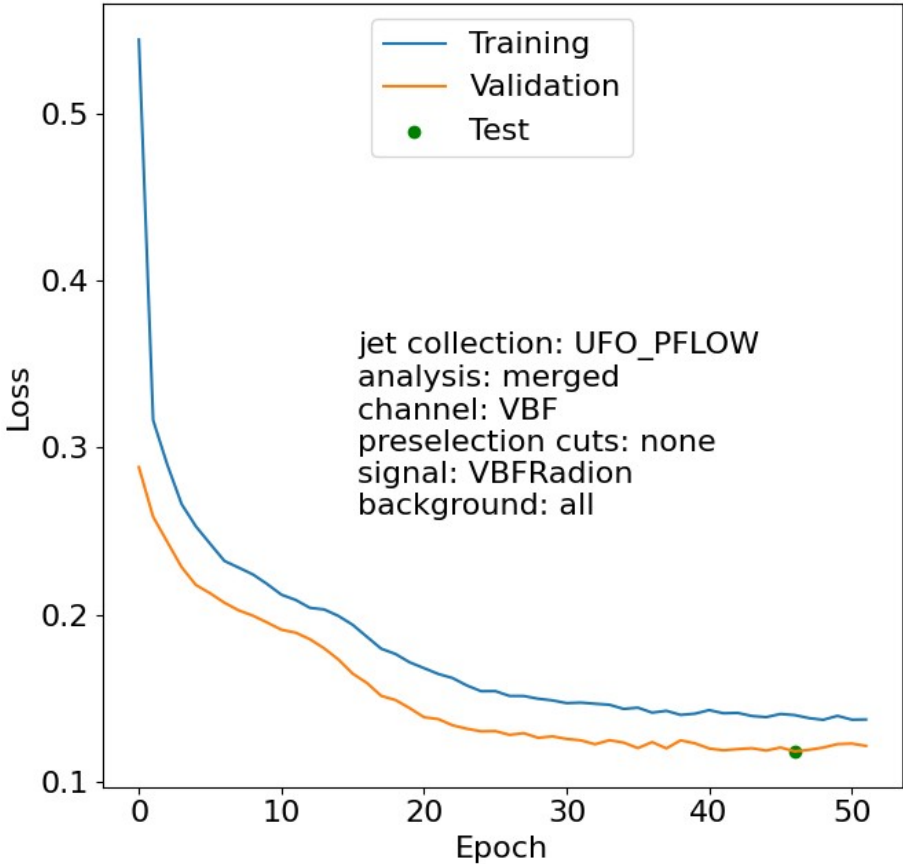
Preselection



Merged VBF Radion

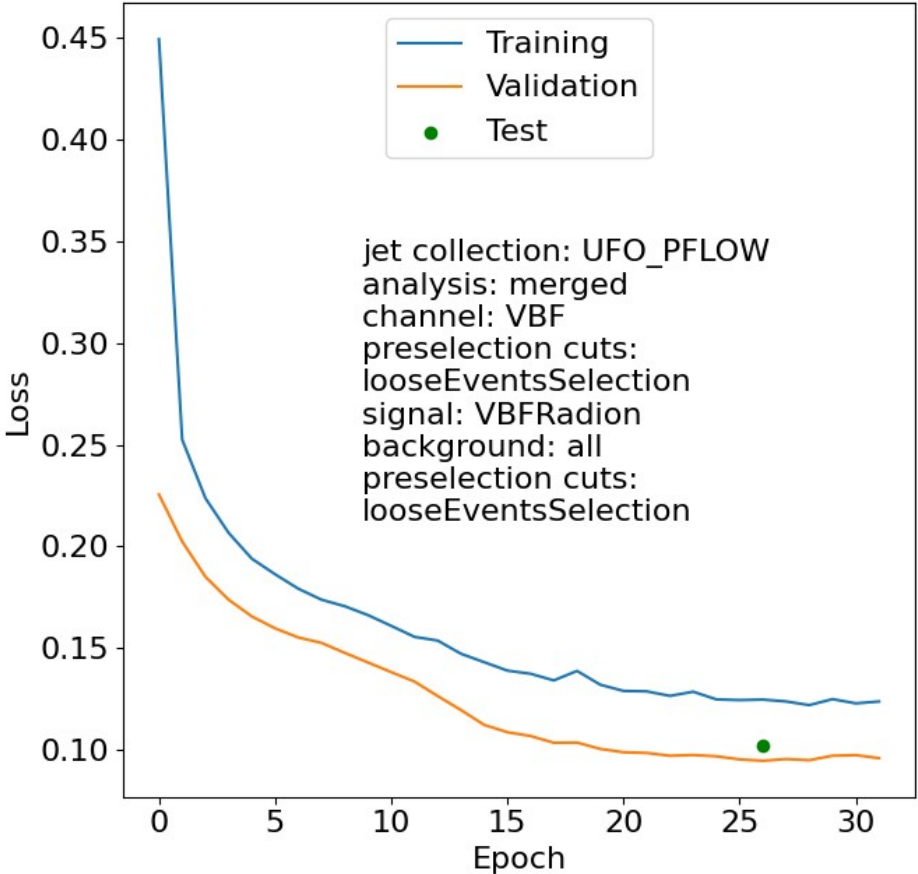
SRs + ZCRs

PDNN model loss



Preselection

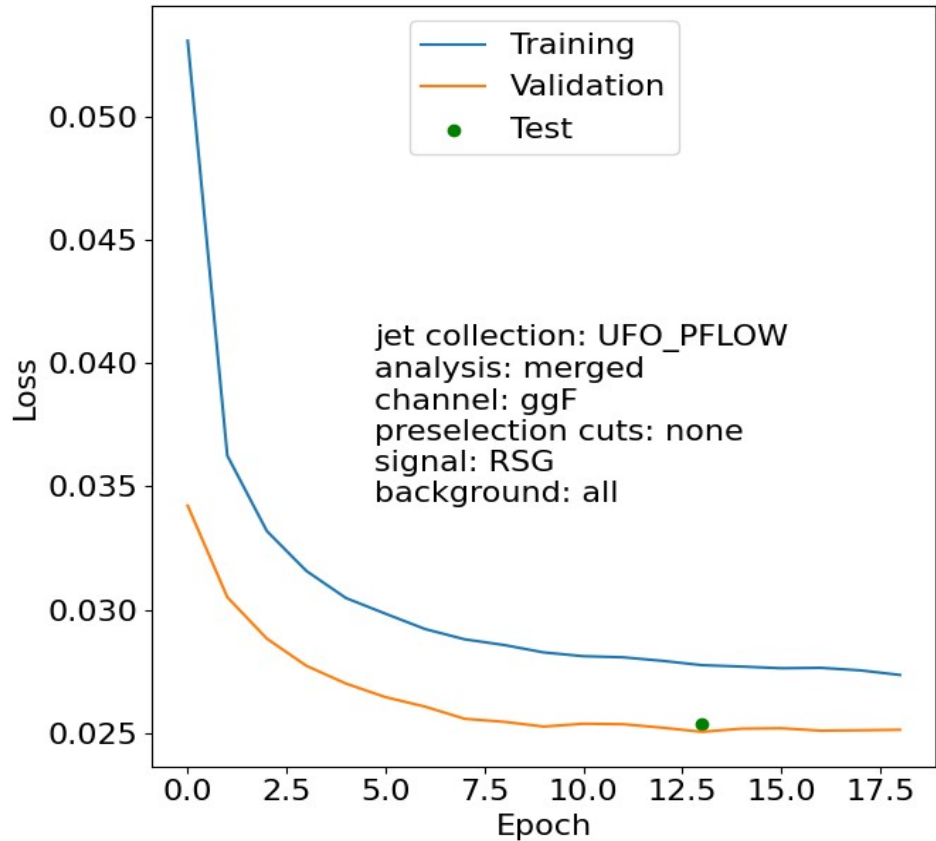
PDNN model loss



Merged ggF RSG

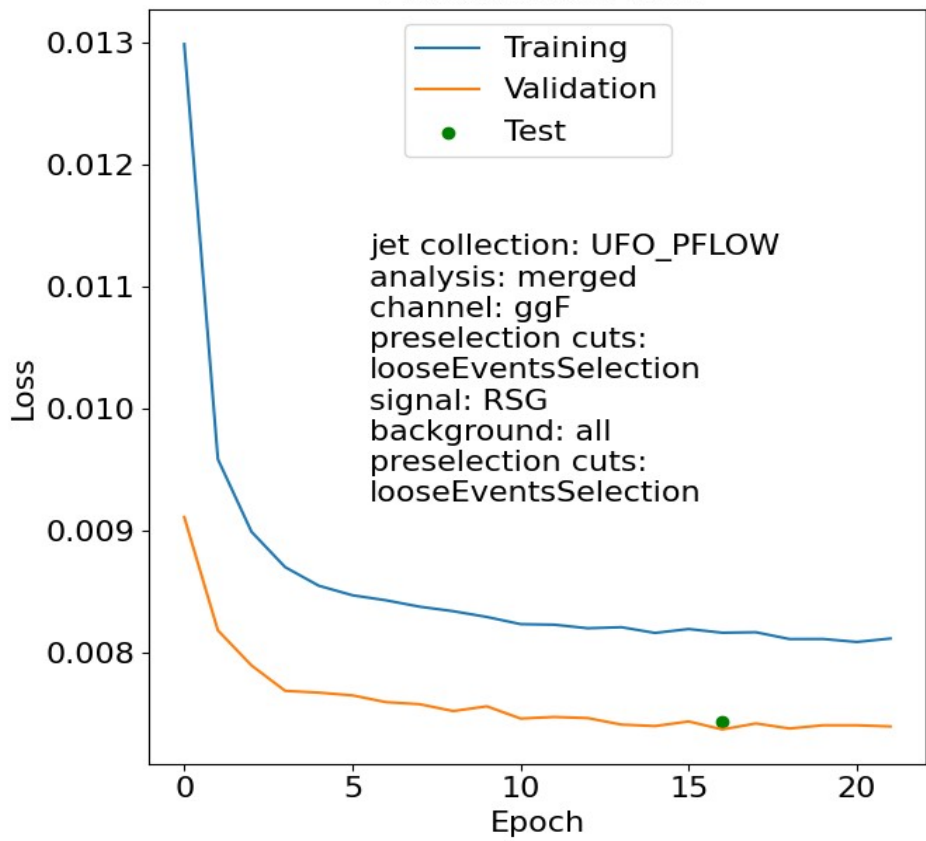
SRs + ZCRs

PDNN model loss



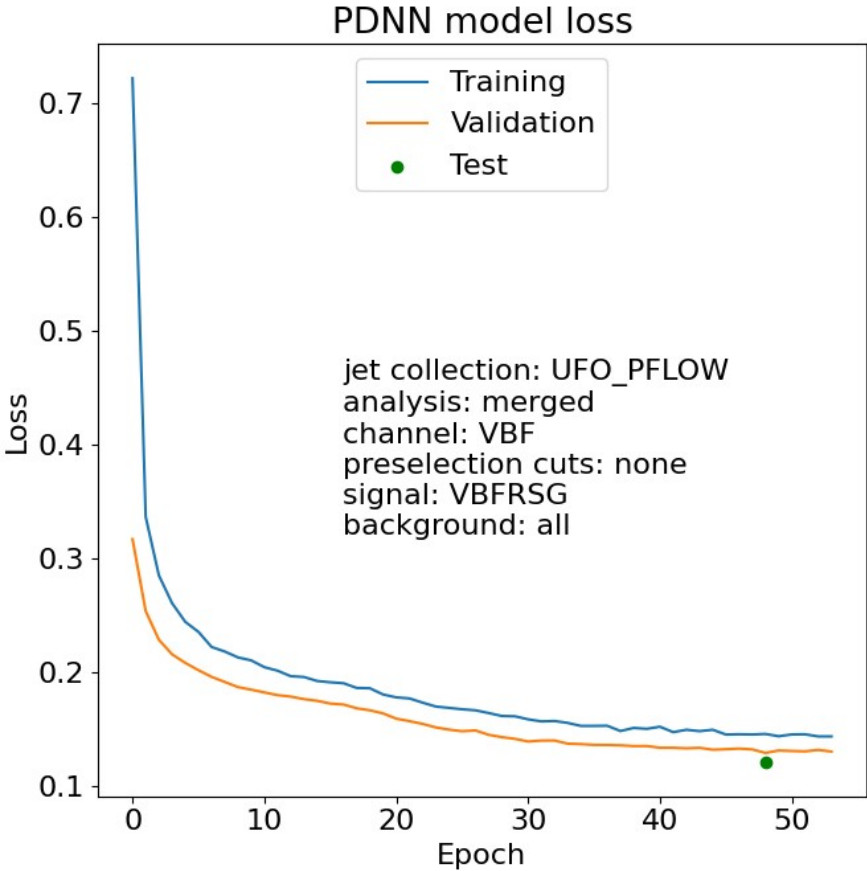
Preselection

PDNN model loss

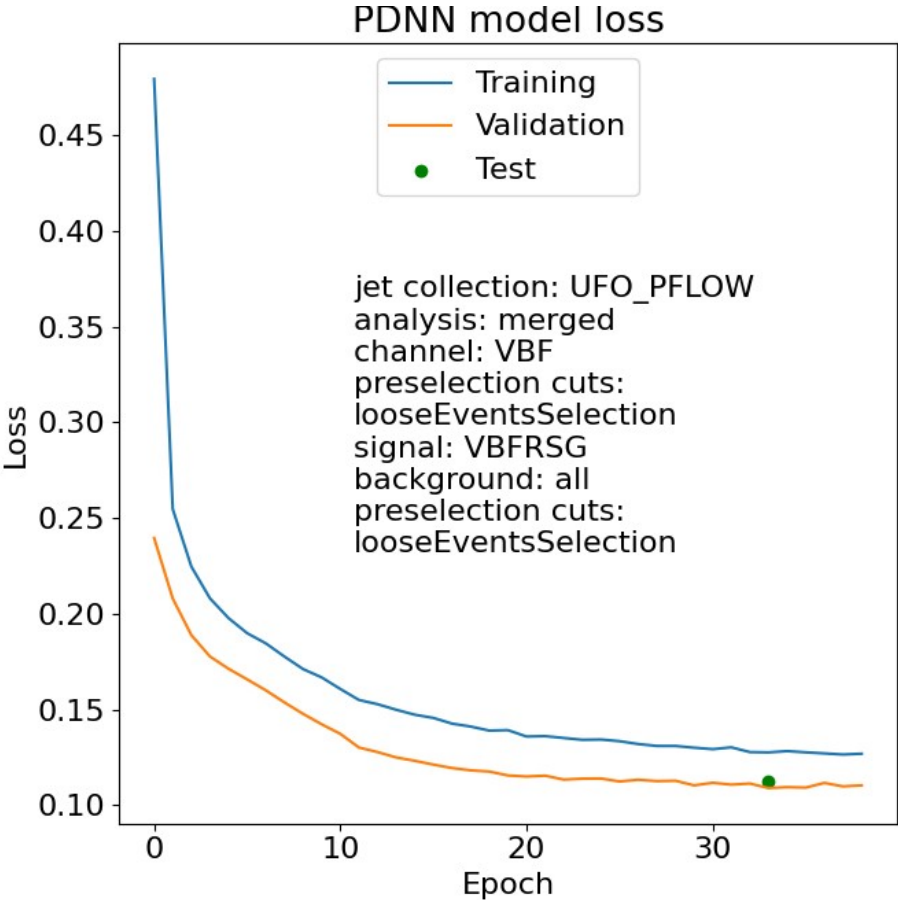


Merged VBF RSG

SRs + ZCRs

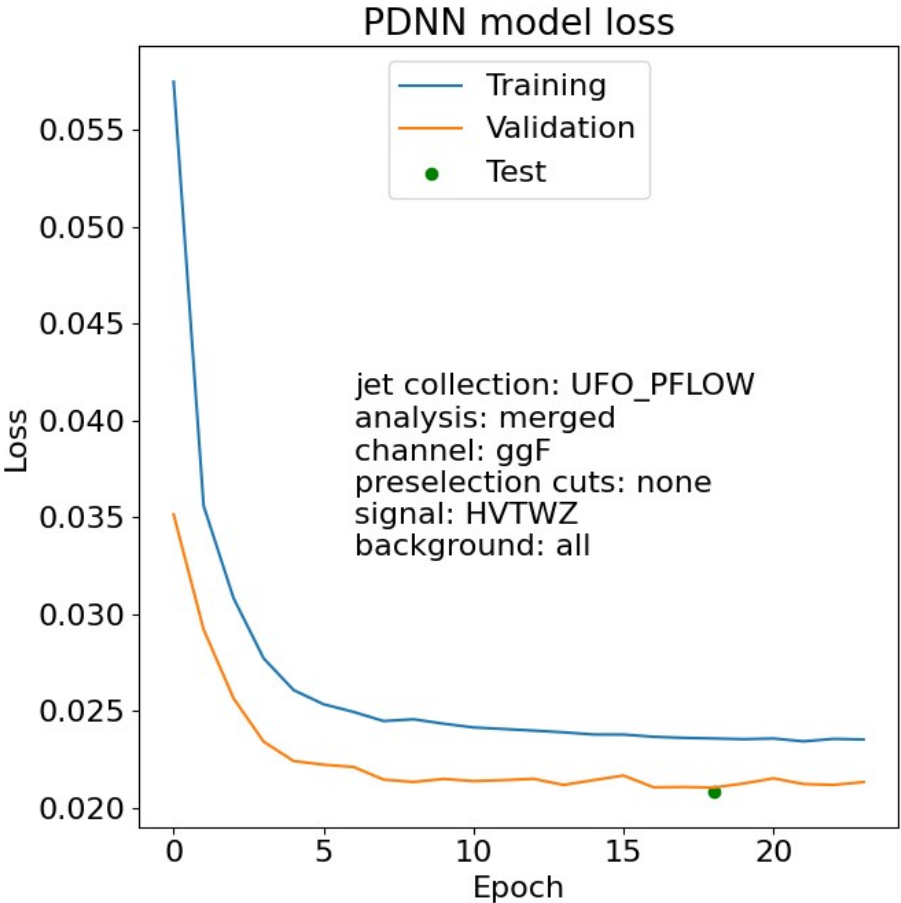


Preselection

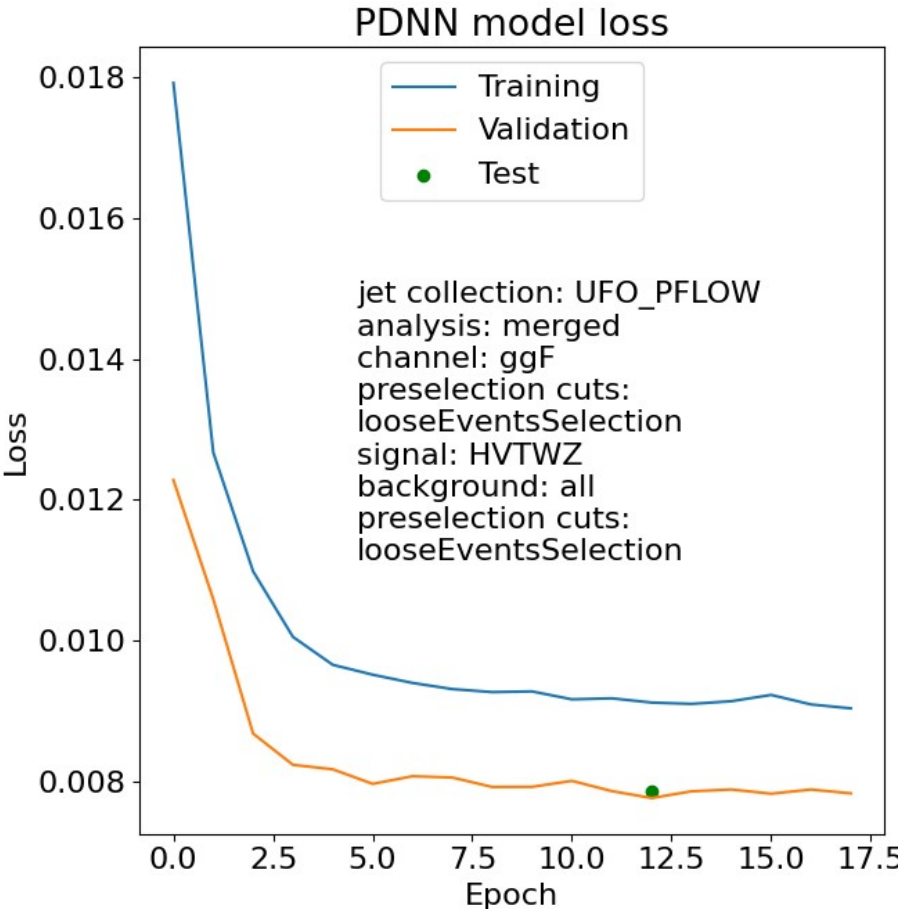


Merged ggF HVT

SRs + ZCRs

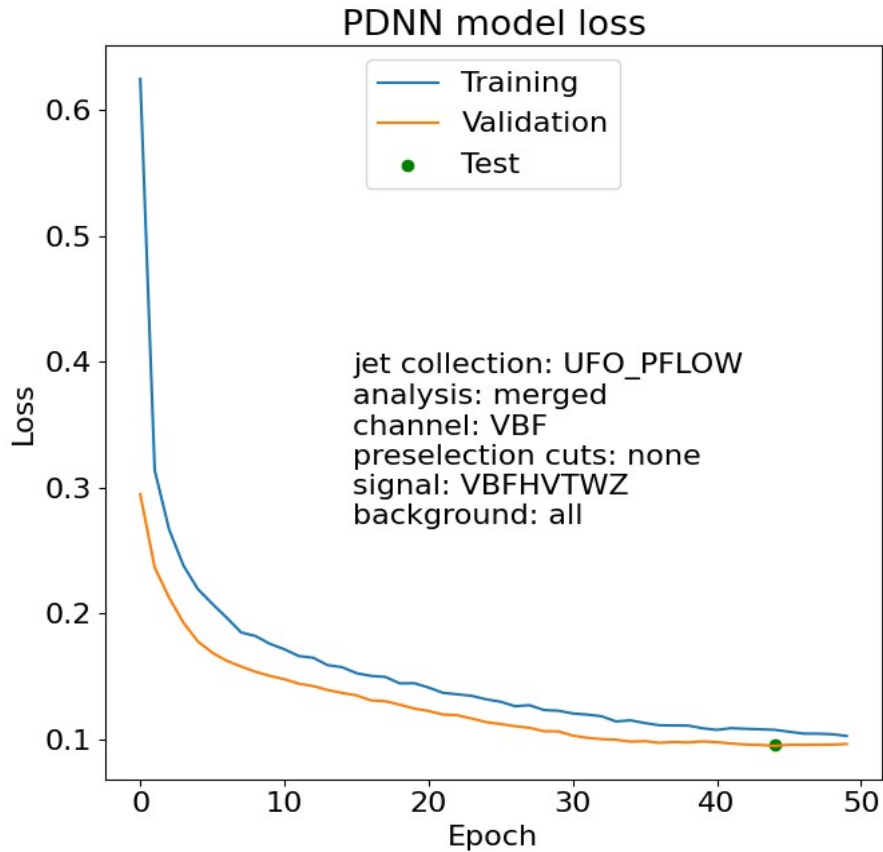


Preselection



Merged VBF HVT

SRs + ZCRs



Preselection

