

Architectures comparison

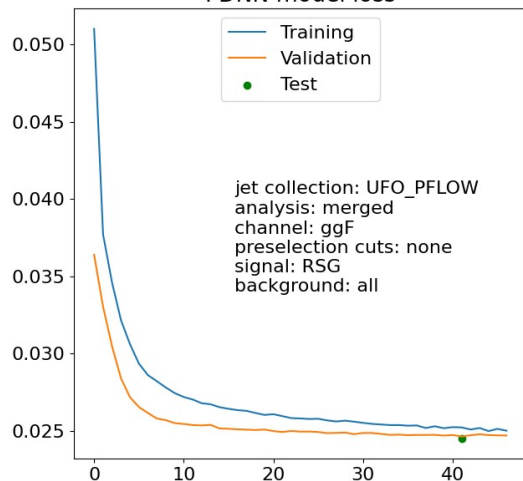
	Internal note	Looser architecture
Number of nodes	128	32 (merged) – 50 (resolved)
Number of layers	4	2
Dropout	0.2	0.3
Optimizer	Adam	
Learning rate	0.0003	0.001
Number of epochs	200	
Early stopping	Patience = 5	
Monitor	Accuracy on validation	

(internal note of Eur. Phys. J. C (2020) 80:1165, [ATL-COM-PHYS-2018-1549](#))

RSG ggF

merged

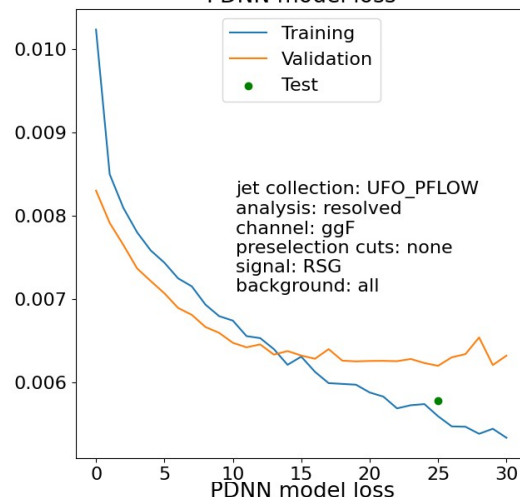
PDNN model loss



deep

resolved

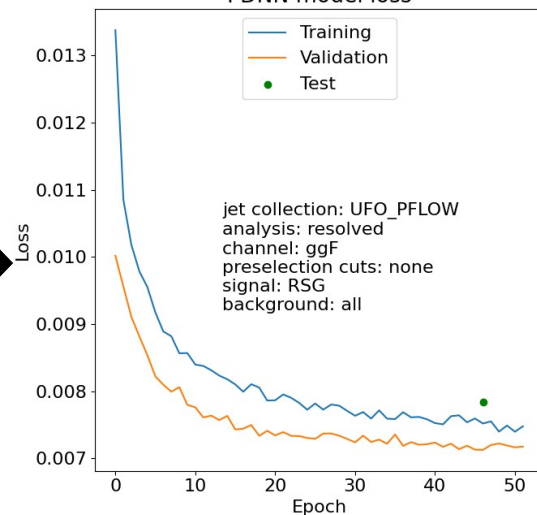
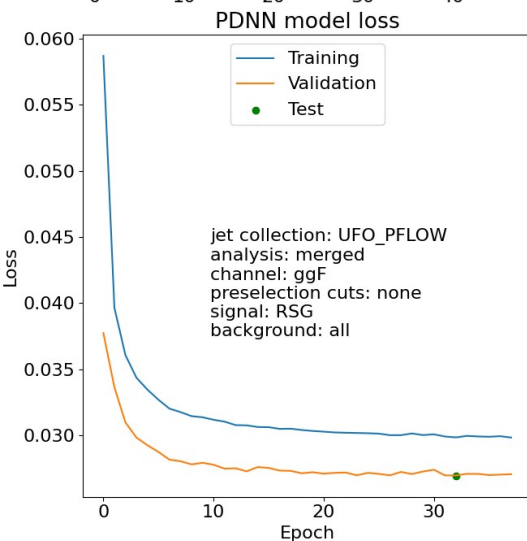
PDNN model loss



Loss migliore
con rete loose

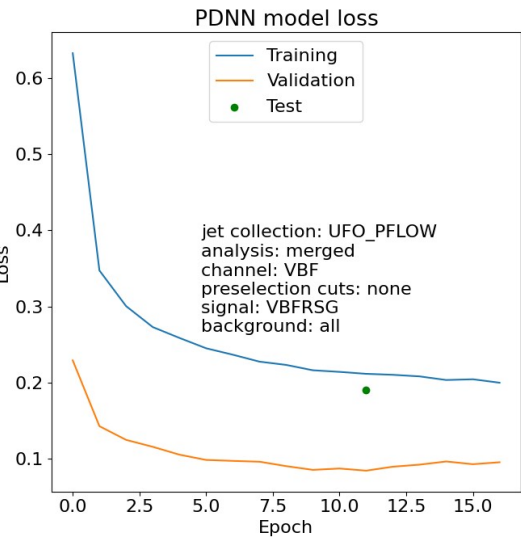
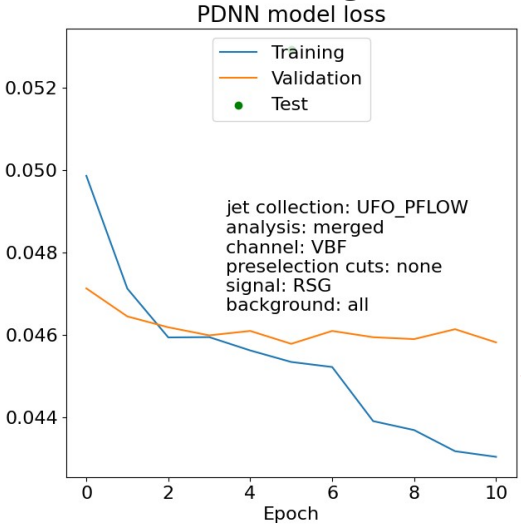
Maggiore
separazione
nelle ultime
epoche, senza
early stopping
la rete più
spinta sarebbe
andata in
overtraining

loose



RSG VBF

merged

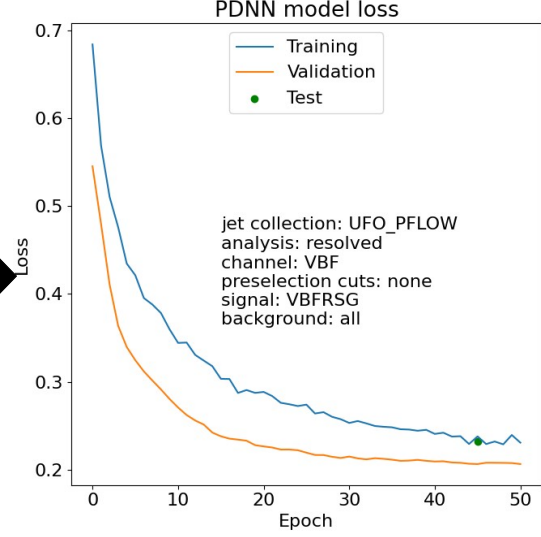
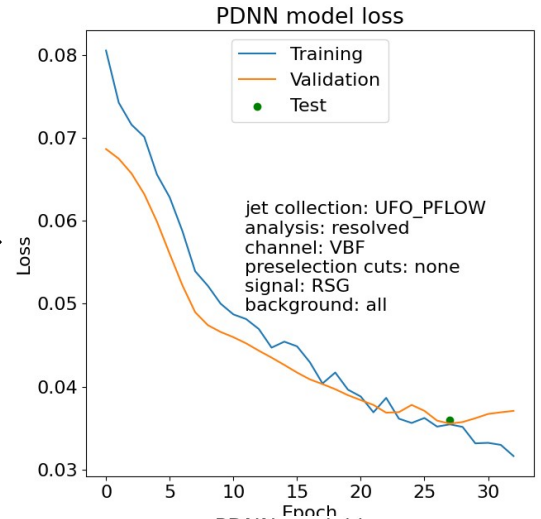


deep

Loss migliore nel caso loose.
Alta separazione tra training e validation nel caso loose → diminuire dropout

loose

resolved

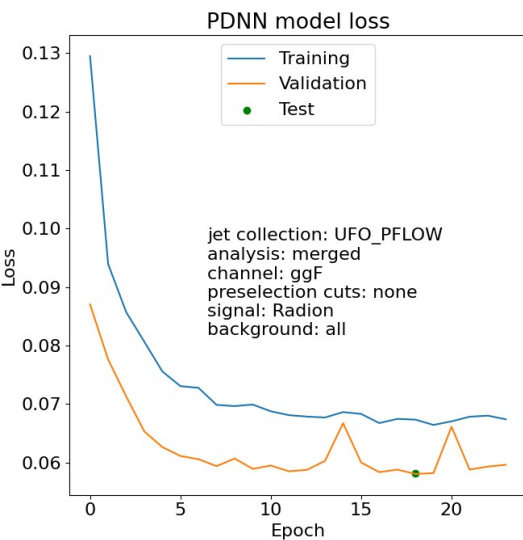
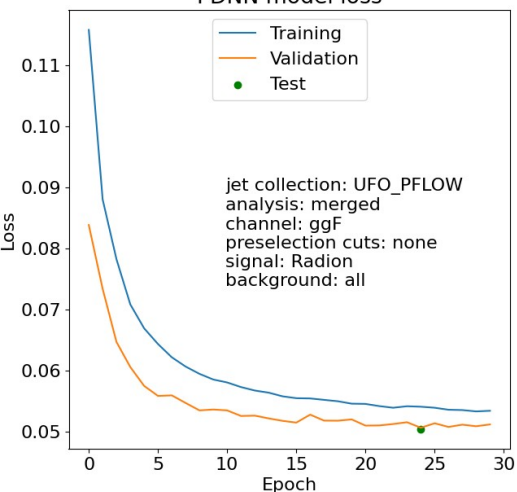


Loss migliore con rete loose

Radion ggF

merged

PDNN model loss

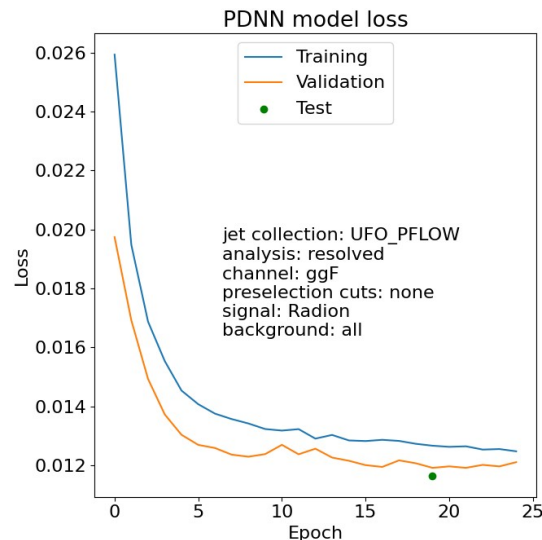
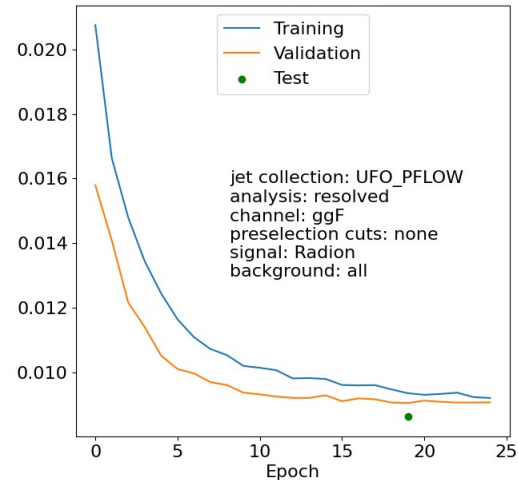


Le spike nella validation potrebbero essere dovute a pesi MC estremamente alti o bassi. Si possono individuare questi eventi, rimuoverli dal train set e guardare la shape delle variabili di input. Se non cambia significativamente allora si possono rimuovere definitivamente questi eventi dal train

← deep →

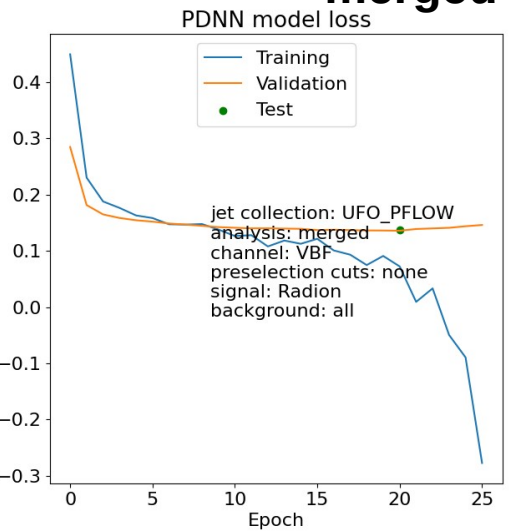
resolved

PDNN model loss



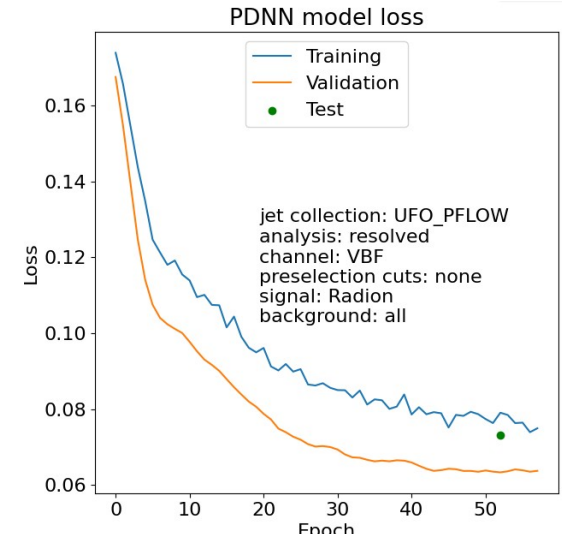
← loose →

Radion VBF merged

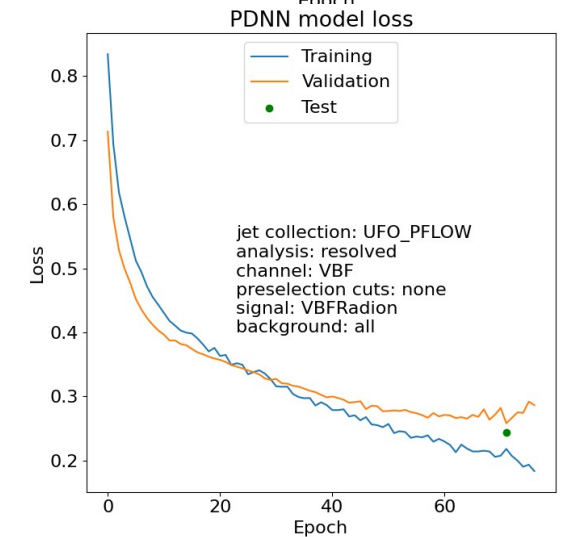
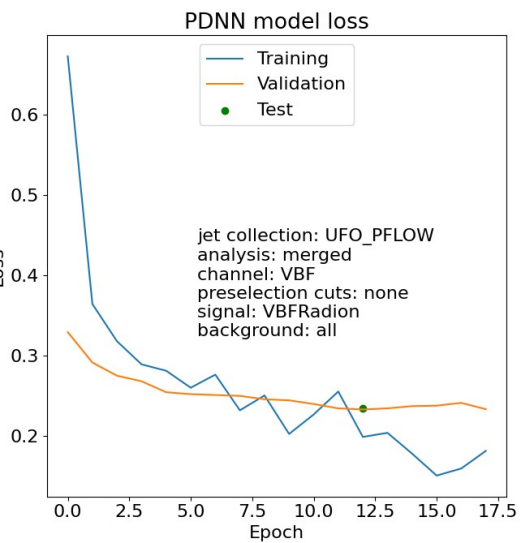


deep

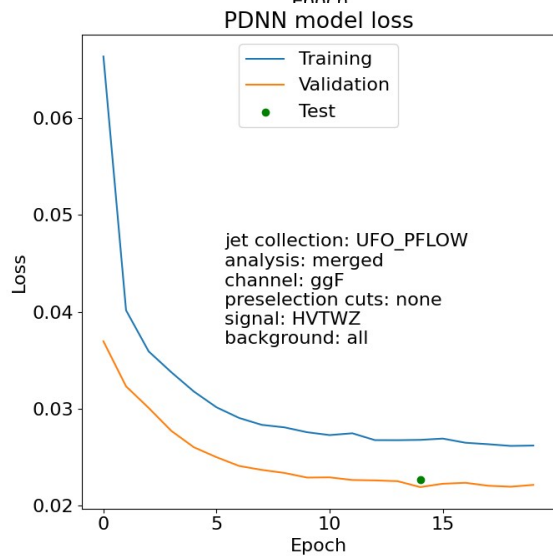
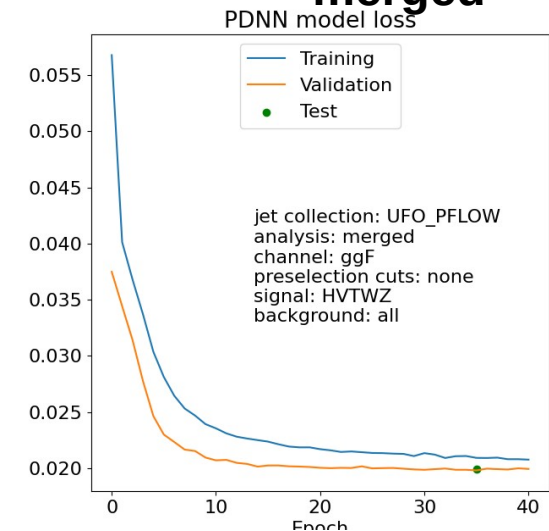
resolved



loose

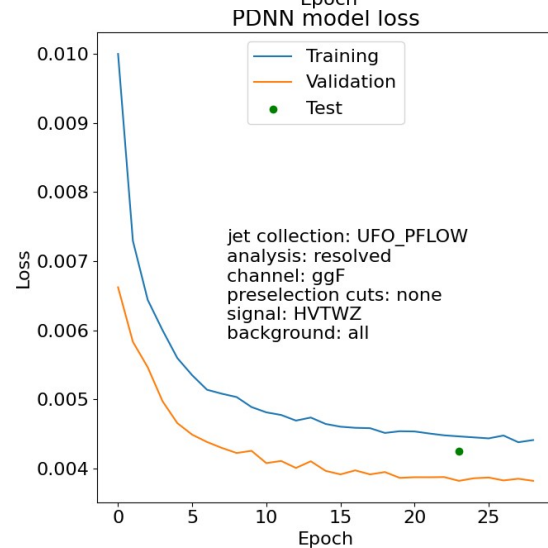
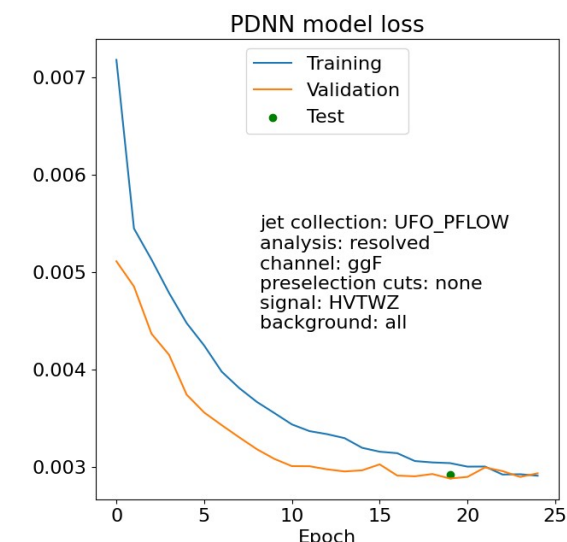


HVTWZ ggF merged



deep

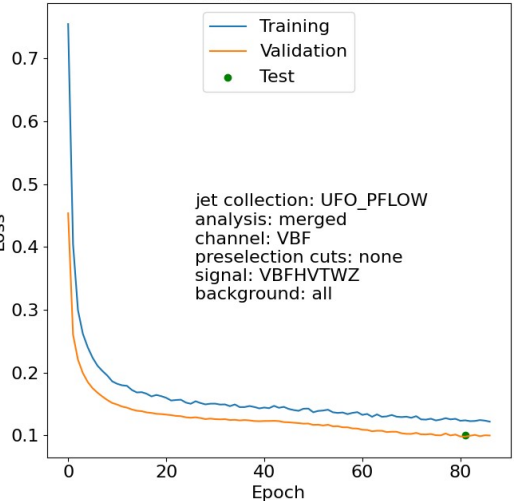
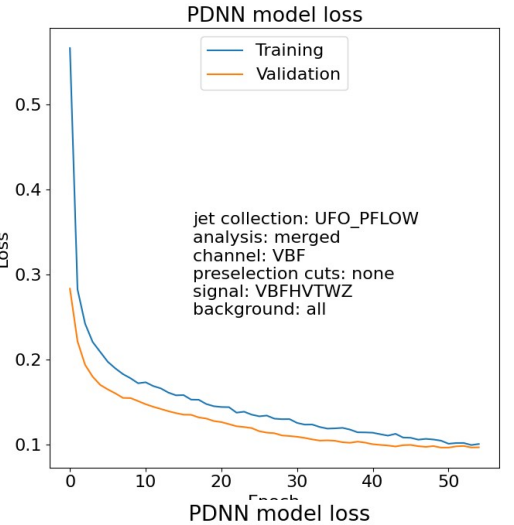
resolved



loose

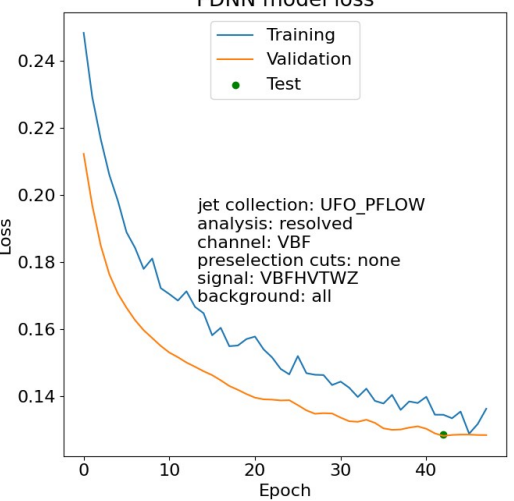
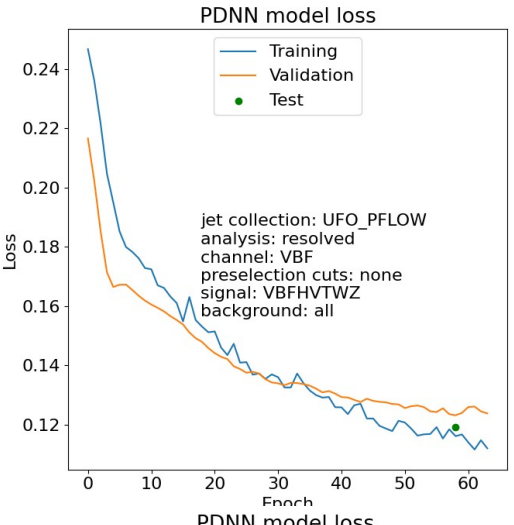
HVTWZ VBF

merged



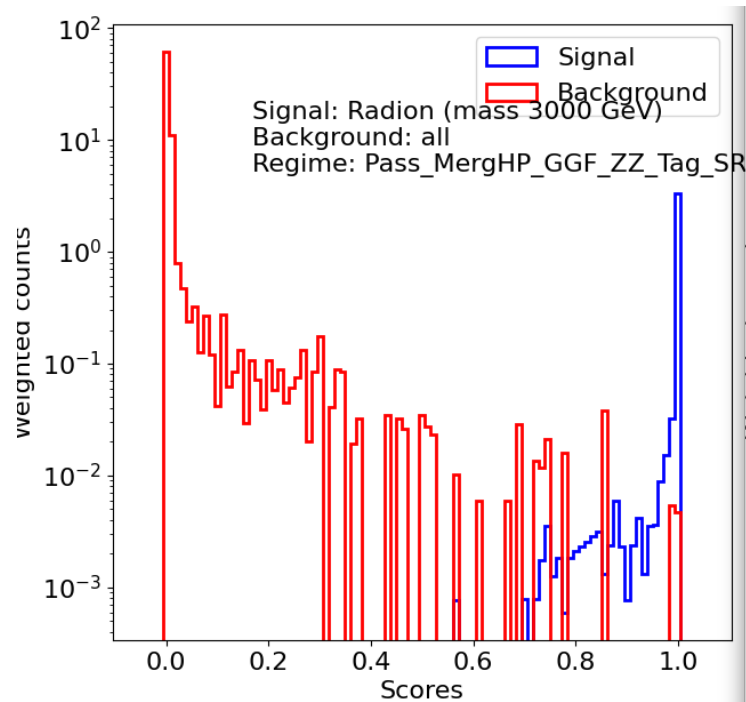
deep

resolved



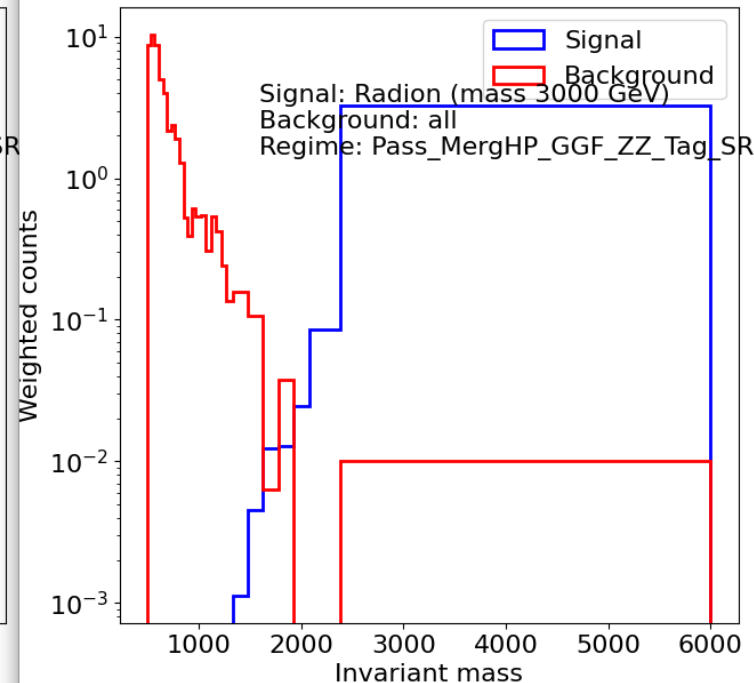
loose

Towards significance



↓

Molti bin vuoti, non è sbagliato pensare di usare anche 5/10 bin
Commento generale: poca statistica



↓

Dovremmo vedere il segnale piccato intorno alla massa selezionata? Se sì → cambiare bin