

AVANTIX

Avancement CBE

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Bases de travail

BT702 vs BT706 vs BT702

```
# bt702: Spécialiser chaque branche sur les impulsions ayant le npersegopt adapté était une erreur. Du coup aucune spécialisation + ajout des pmods
# bt703: Aucune spécialisation + ajout des pmods + threshold_dB = 6 (précédemment égal à 3)
# bt704: target_snrs = list(range(8, 16)) + list(range(17, 26, 4)) -> targeted_snrs = [12, 18, 24] + threshold_dB = 7
# bt705: target_snrs = target_snrs = 30 + threshold_dB = 10. BUG: Some pulses are not labelised even though they were expected to be deleted from iq
# bt706: target_snrs = target_snrs = 30 + threshold_dB = 10 FIXED
# bt707: Pareil que 706 sauf qu'on met threshold_dB=3 dans la fct generate_sxx_nsxx_mask L=79
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Apprentissage sans sous-échantillonnage

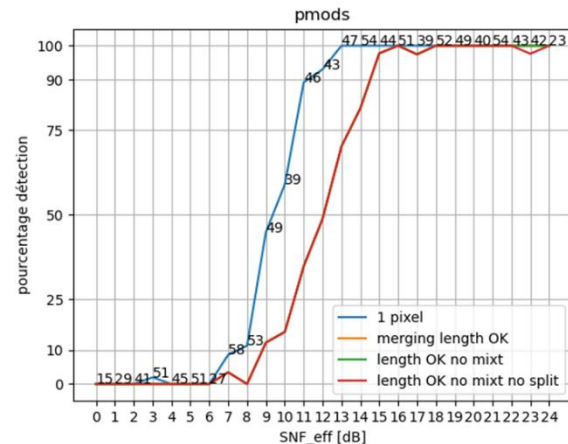
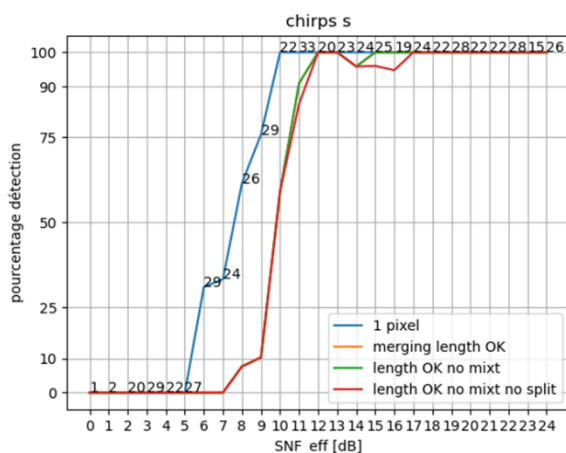
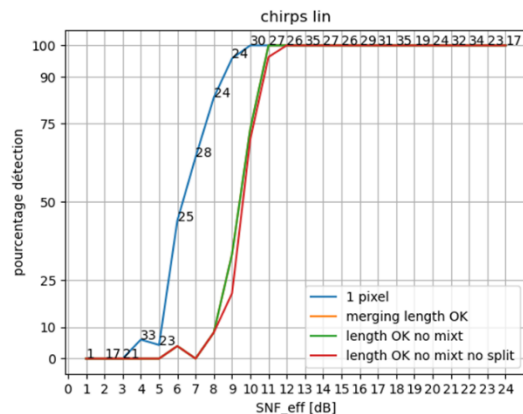
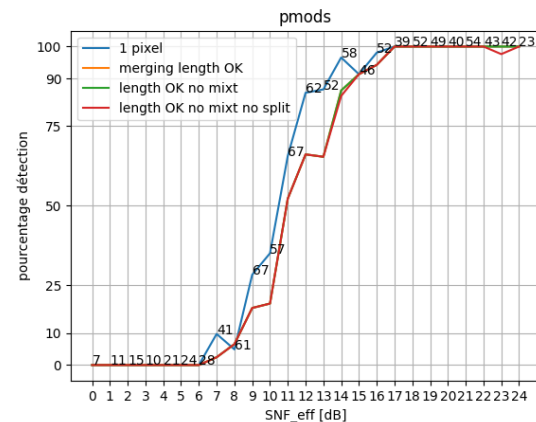
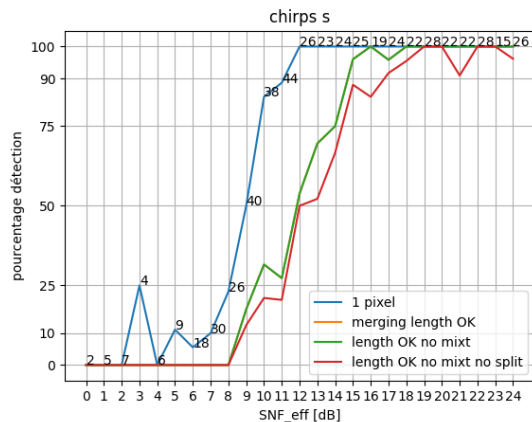
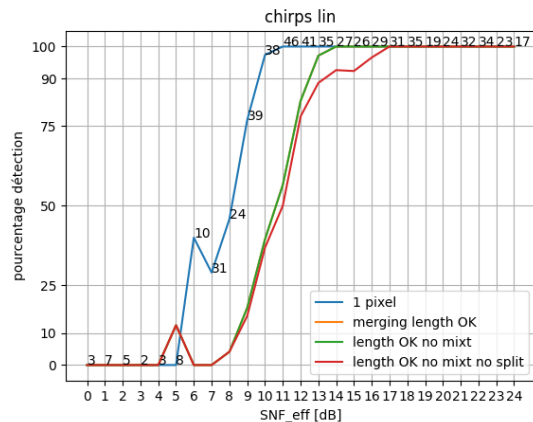
Budget GFLOPs

nperseg	Down time	Down freq	Down time x Down Freq	GFLOPs max
256	16	1	16	1
512	8	1	8	2
1024	4	1	4	4,5
4096	2	1	2	9
16384	2	4	8	2
131072	2	8	16	1

Budget sans sous-échantillonnage par branche = 1,2

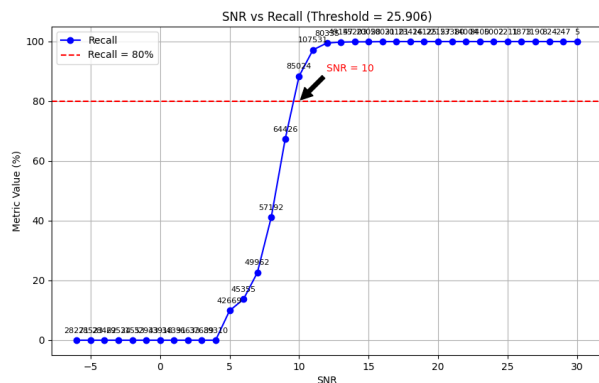
IA + seuillage du SXX pour avoir un recall de 100% au-delà de 15dB

End2End : IA + Threshold vs FixedConvs

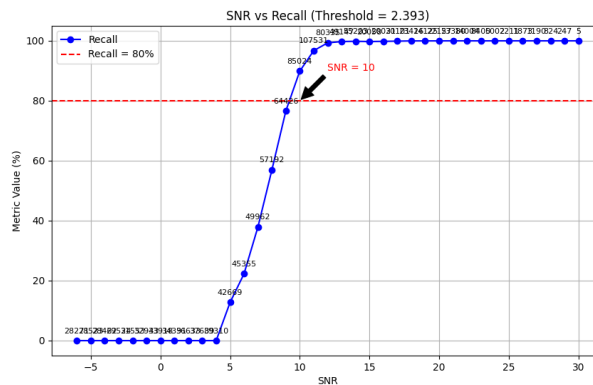


Résultats 256

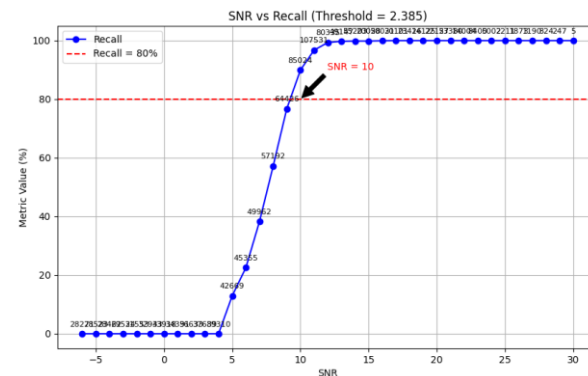
4 kernels fixés + channel max
PRAUC = 95,3



1 couche + channel average
PRAUC = 98,1

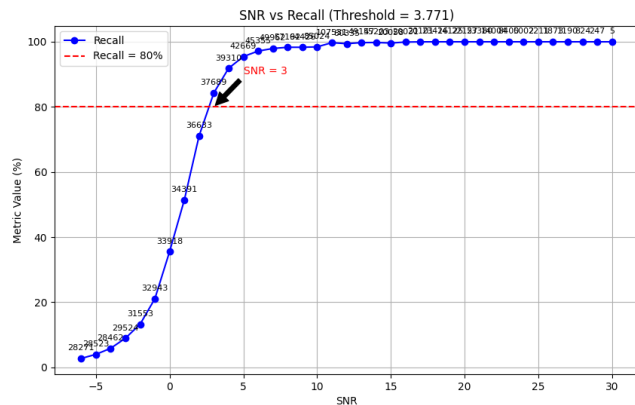


1 couche + channel average +
Seuillage
PRAUC = 98,1

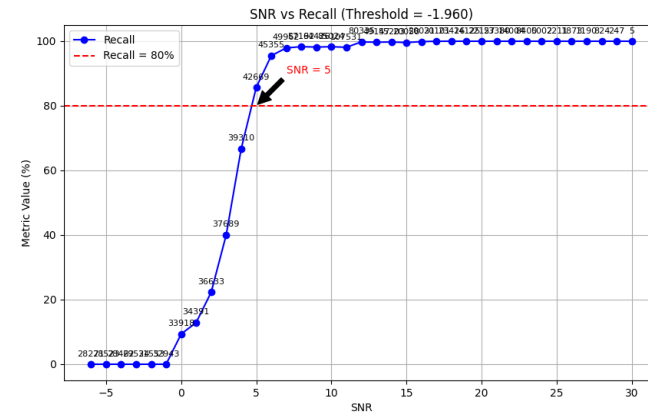


Gros modèle résultats 256

Dice

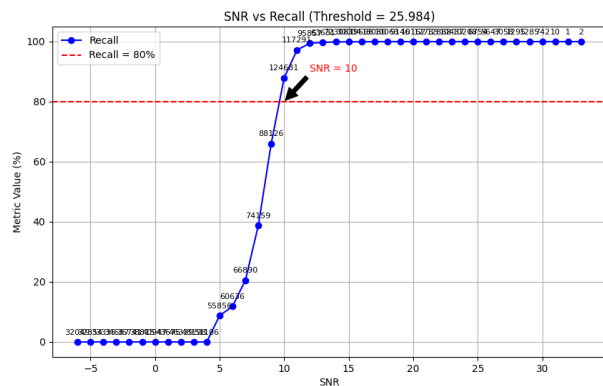


MSE

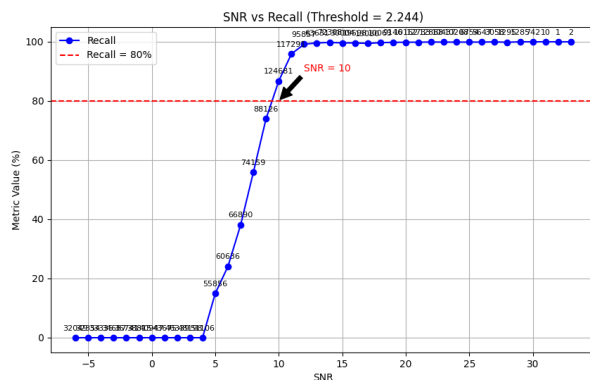


Résultats 512

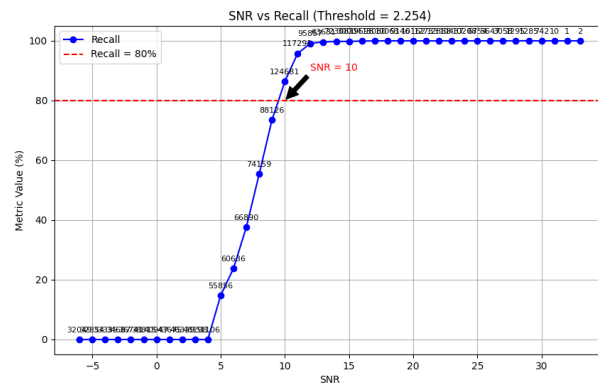
4 kernels fixés + channel max
PRAUC = 94,7



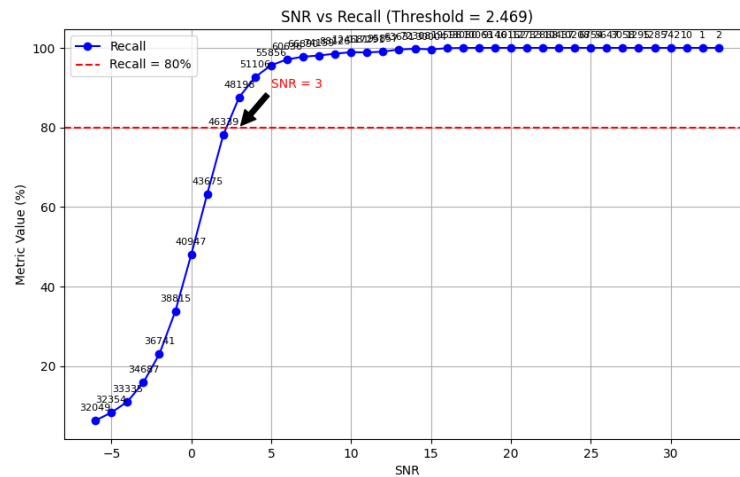
1 couche + channel average
PRAUC = 98,1



1 couche + channel average +
Seuillage
PRAUC = 98,1

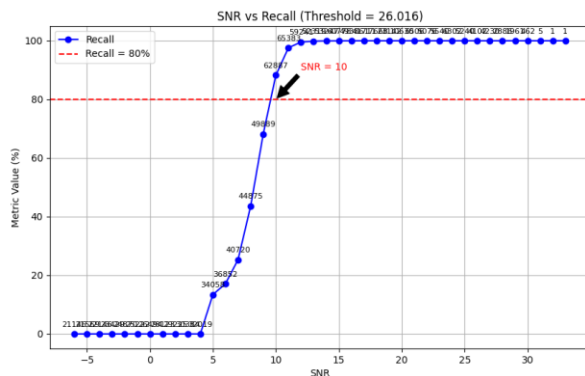


Gros modèle résultats 512

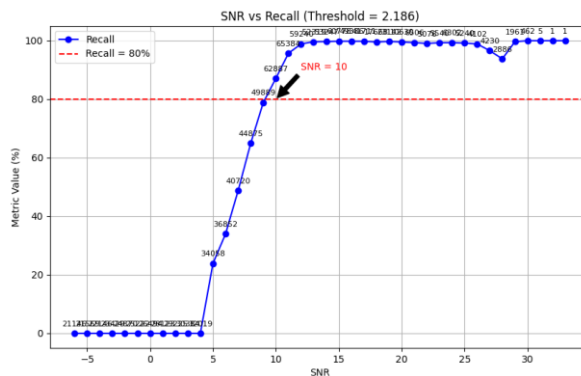


Résultats 1024

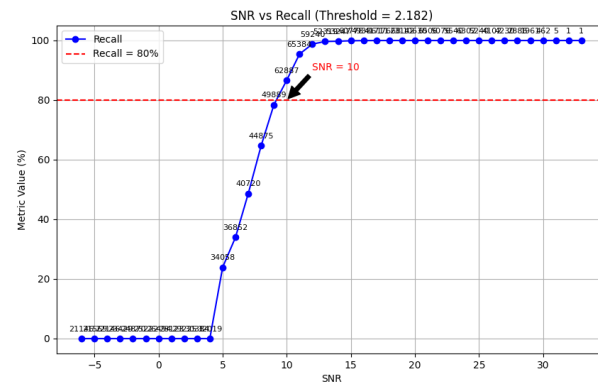
4 kernels fixés + channel max
PRAUC = 81,91



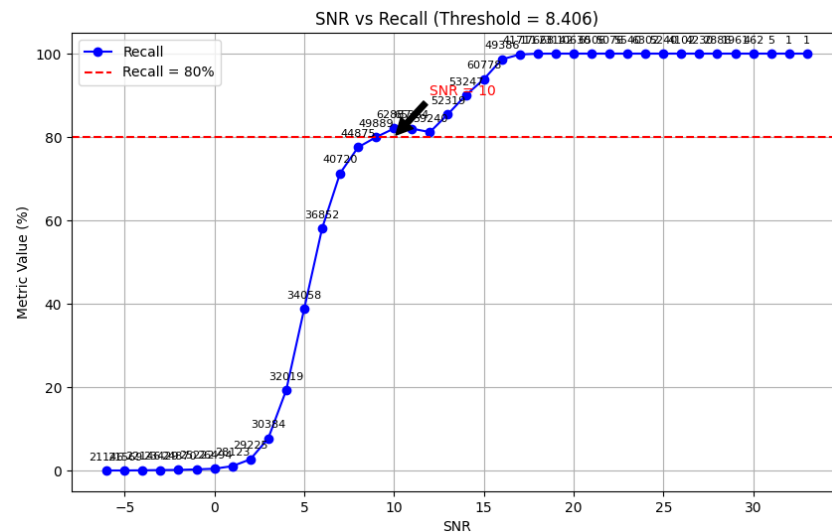
1 couche + channel average
PRAUC = 97,8



1 couche + channel average +
Seuillage
PRAUC = 97,8

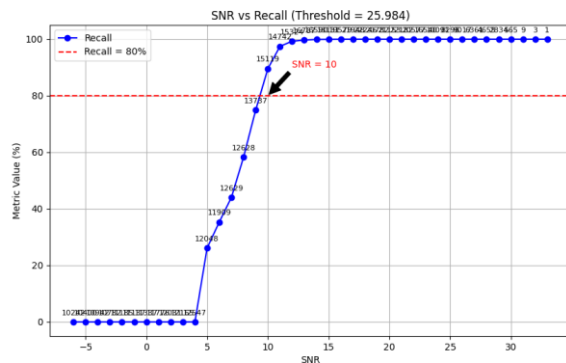


Gros modèle résultats 1024

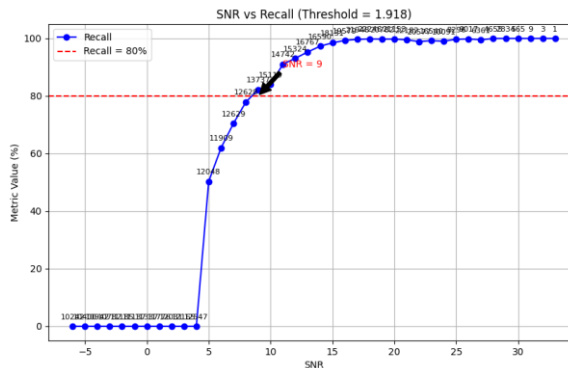


Résultats 4096

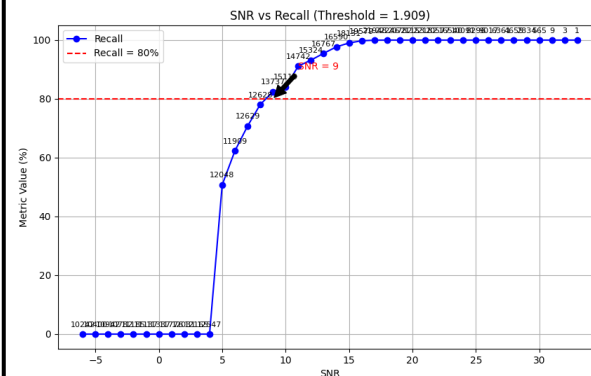
4 kernels fixés + channel max
PRAUC = 91,2



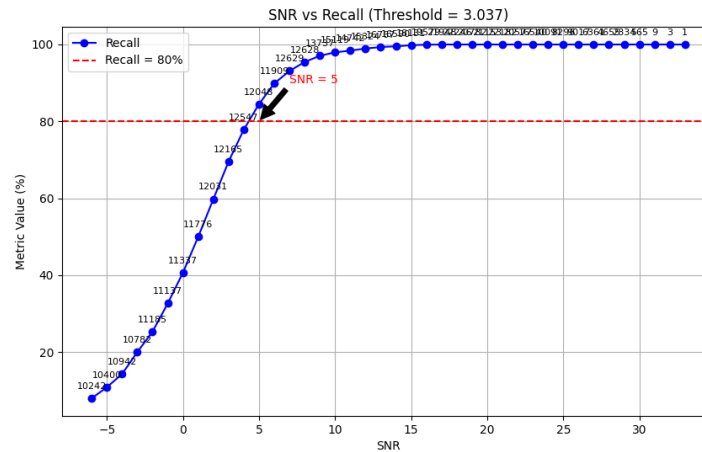
1 couche + channel average
PRAUC = 97,5



1 couche + channel average
+ Seuillage
PRAUC = 97,9

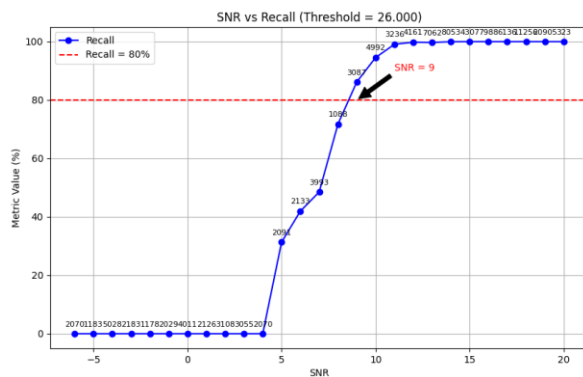


Gros modèle résultats 4096

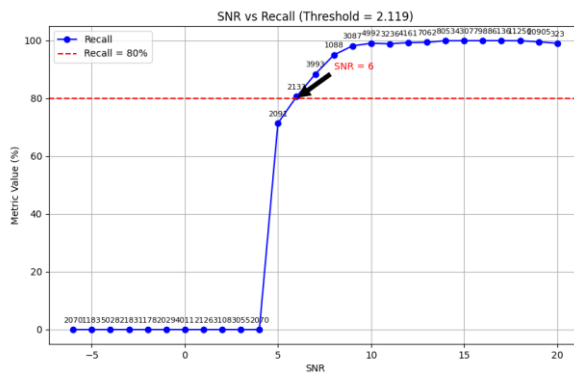


Résultats 16384

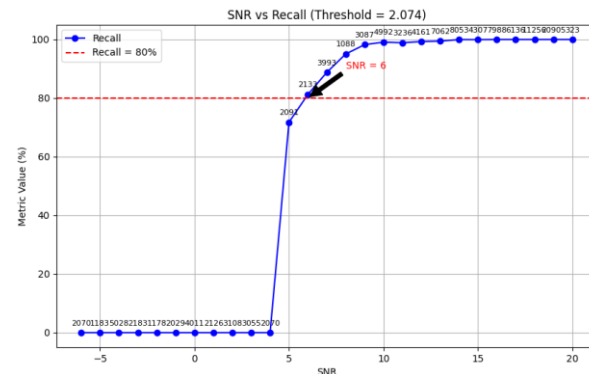
4 kernels fixés + channel max
PRAUC = 98,5



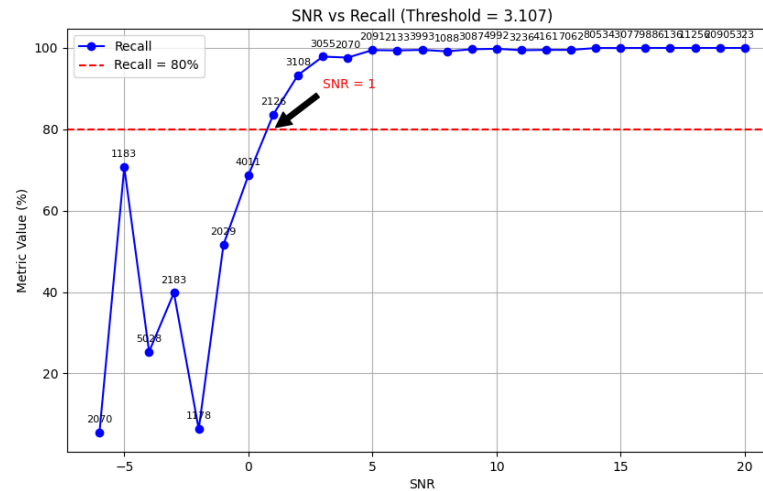
1 couche + channel average
PRAUC = 97,8



1 couche + channel average
+ Seuillage
PRAUC = 98,1

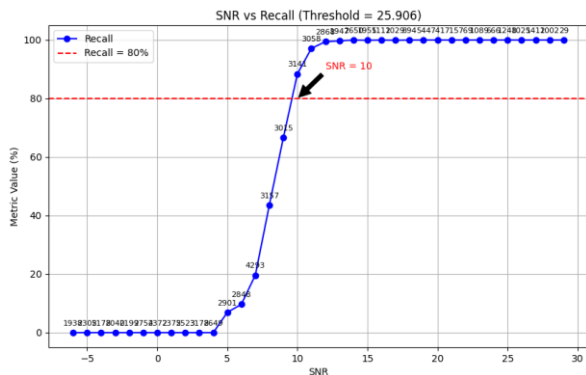


Gros modèle résultats 16384

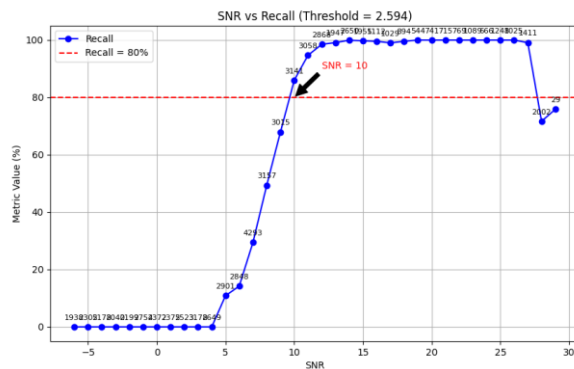


Résultats 131072

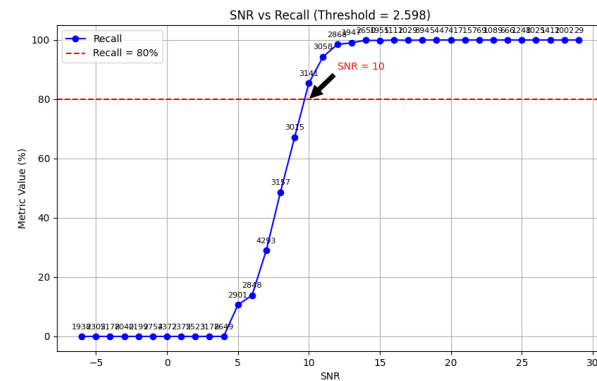
4 kernels fixés + channel max
PRAUC = 74,5



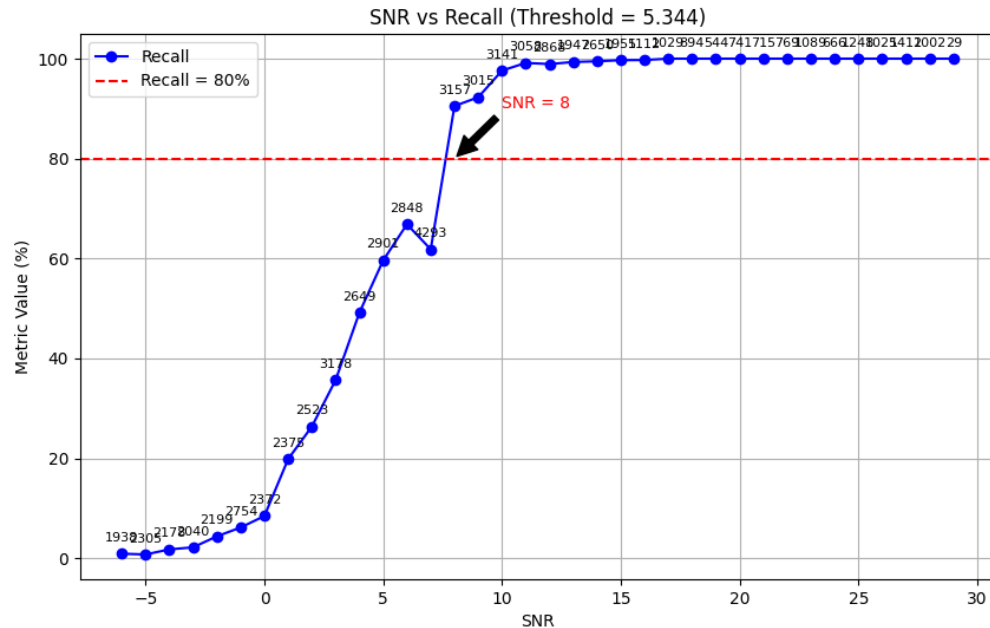
1 couche + channel average
PRAUC = 94,5



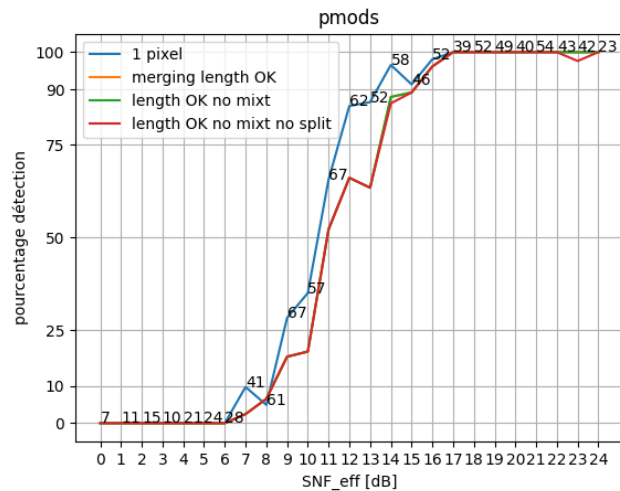
1 couche + channel average +
Seuillage
PRAUC = 94,6



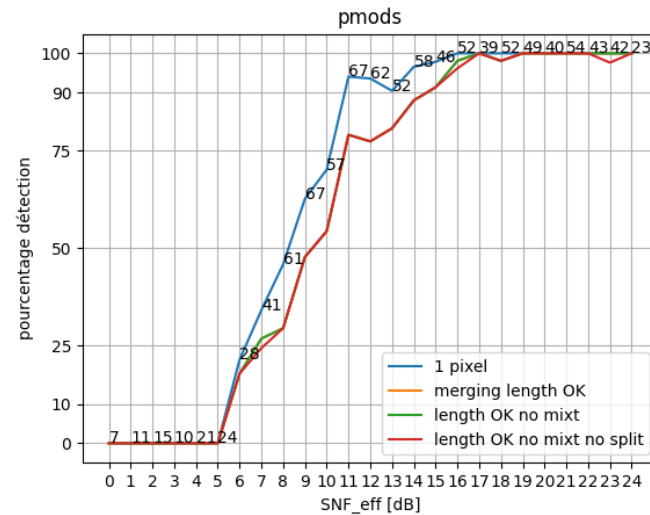
Gros modèle résultats 131072



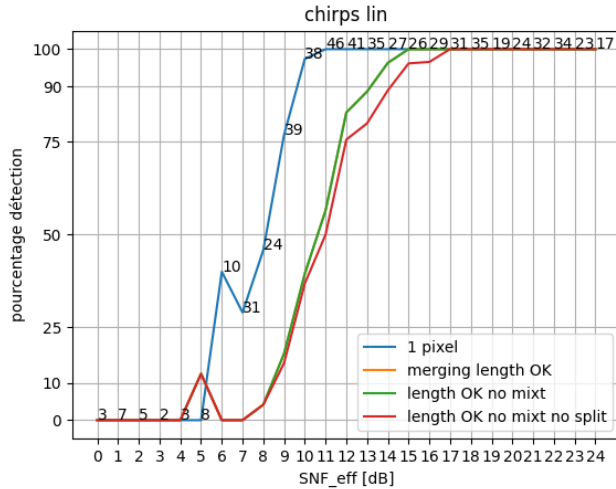
1 couche



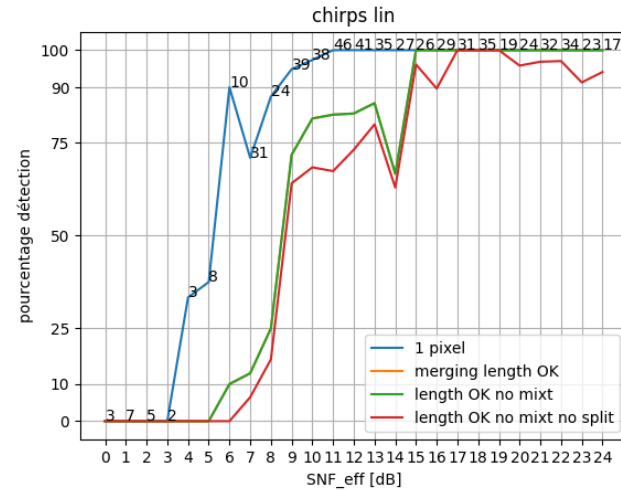
8 couches



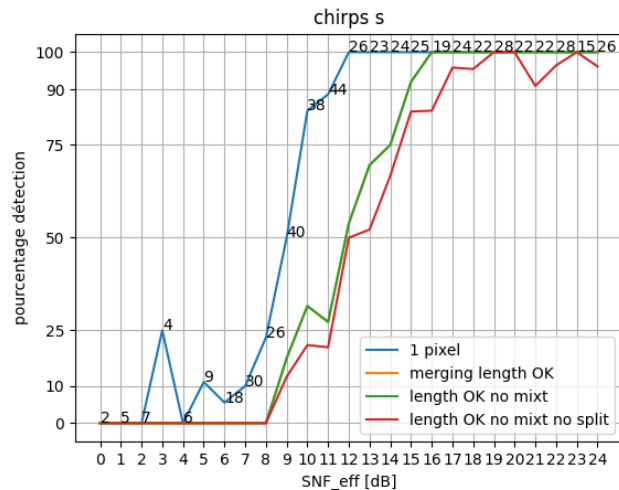
1 couche



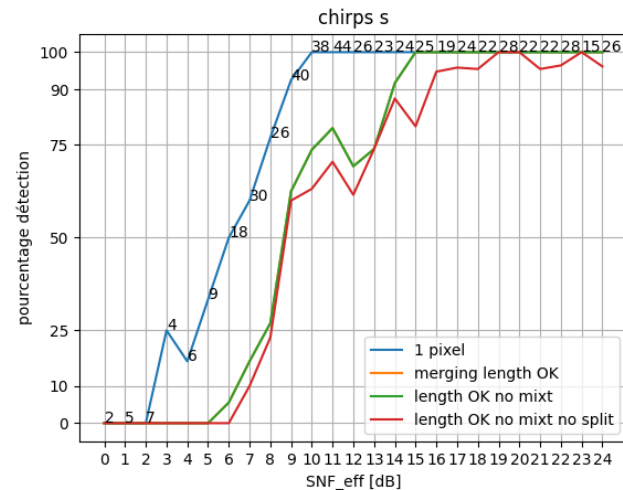
8 couches



1 couche



8 couches



Article Fraunhofer

End-to-End Recognition of Interleaved Radar Emitters from the Spectrogram

<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10289566>

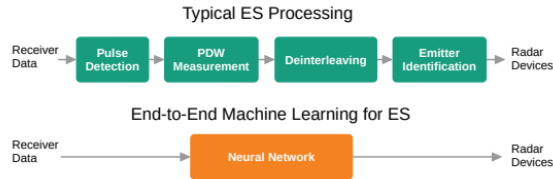
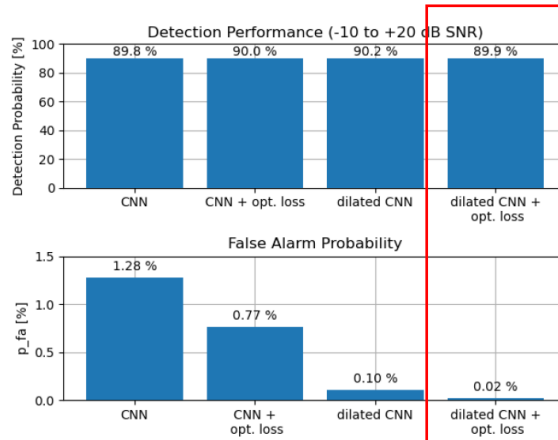


Fig. 1. Classical signal processing vs end-to-end learning for electronic support



100 MHz de bande

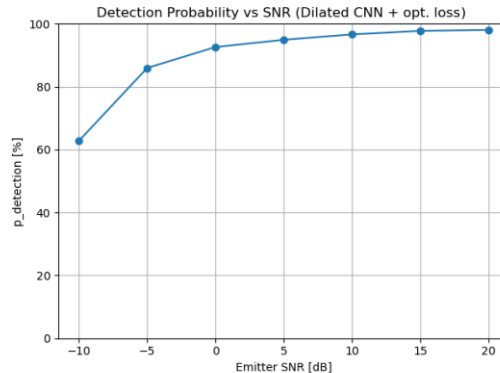
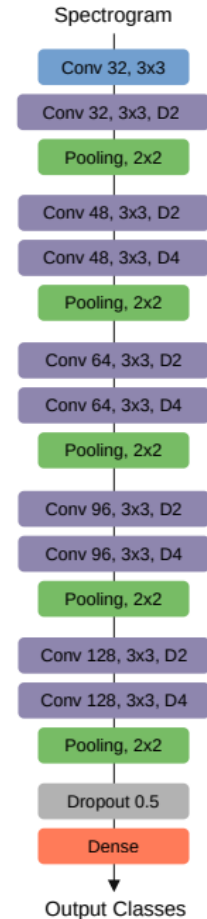


Fig. 6. Detection probability of an emitter vs SNR

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