

AVANTIX

Avancement CBE

AVANTIX

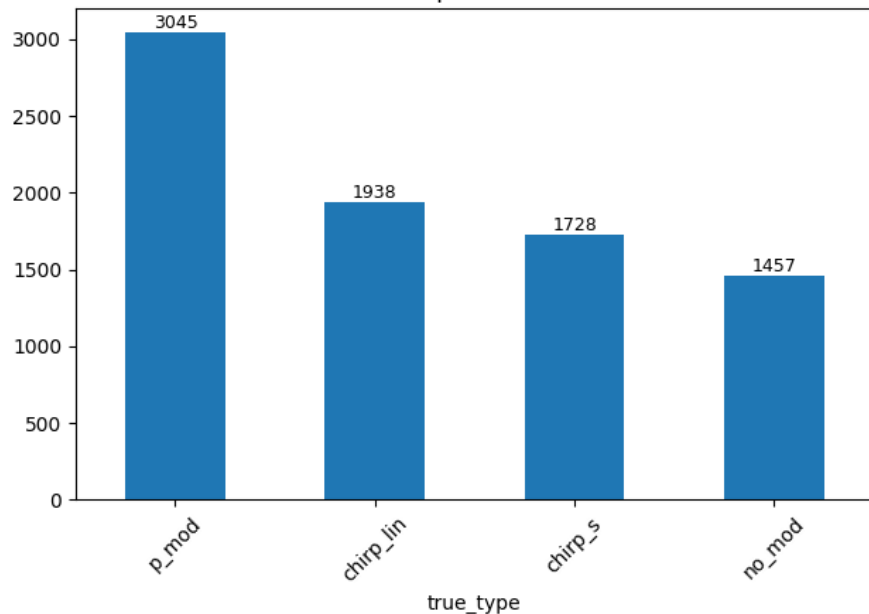
Classification modulation

Jeu de données

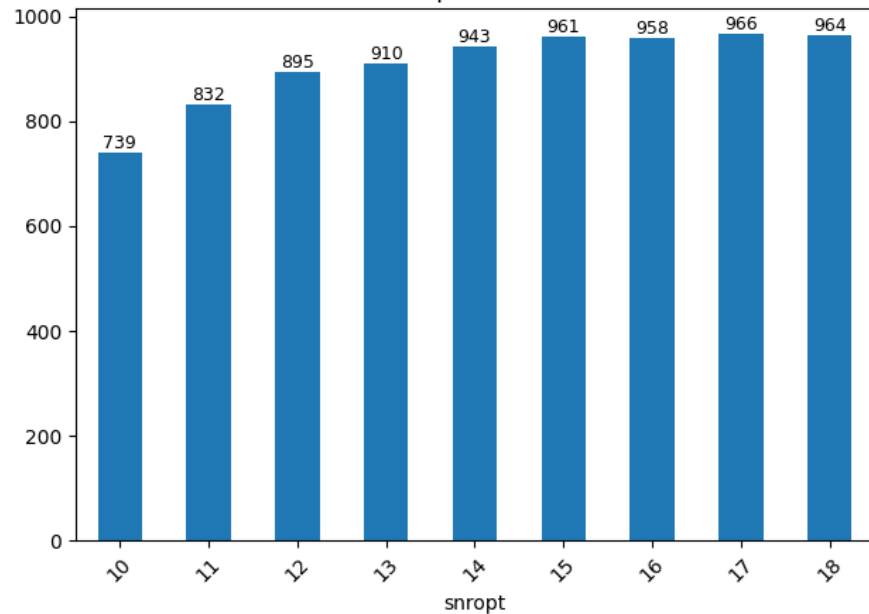
9 fichiers /data/SIGINT/FVE/LEGO_FV/long_LEGO_FV_noP124_snropt_{snropt}.iq.pkl

snropt = [10, 18] dB

Total of pulses = 8168

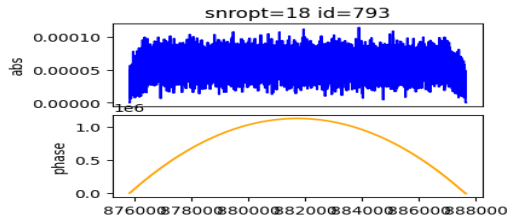
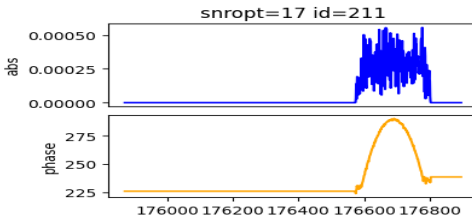
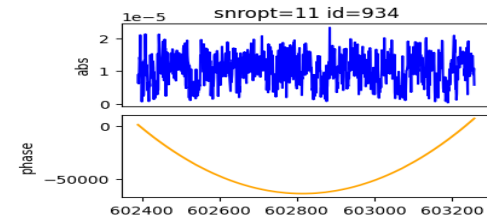
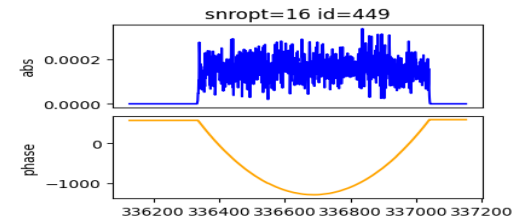
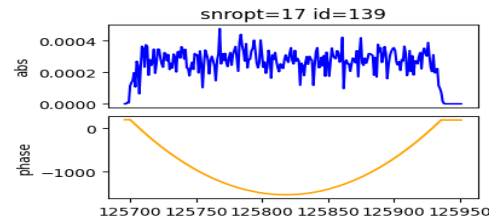
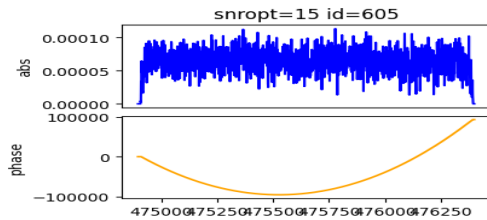
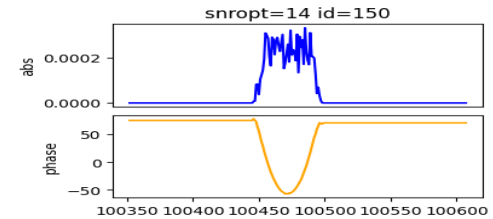
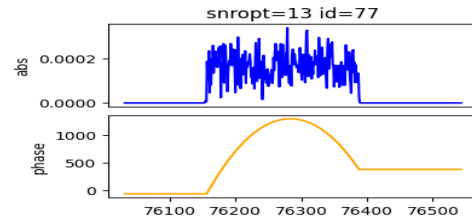
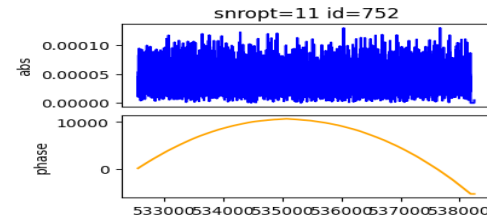


Total of pulses = 8168



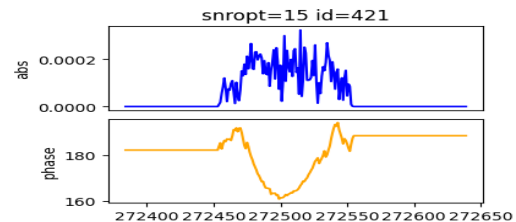
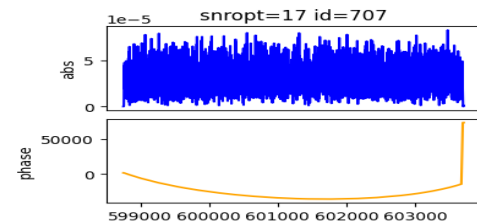
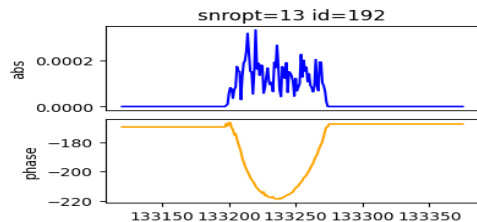
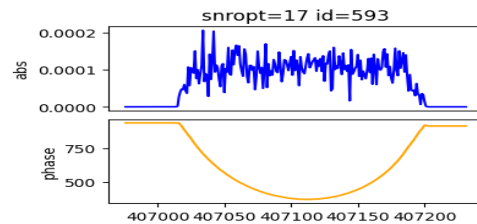
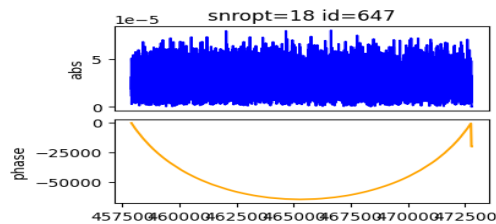
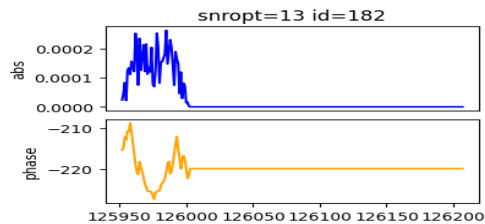
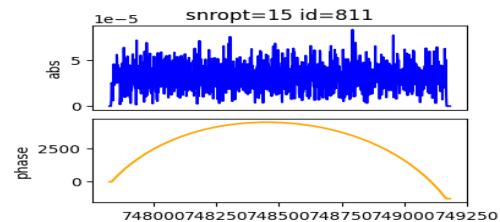
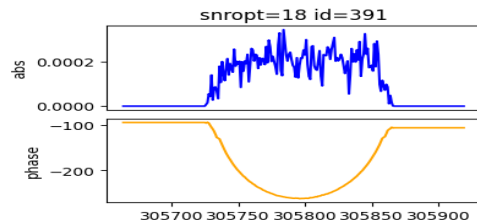
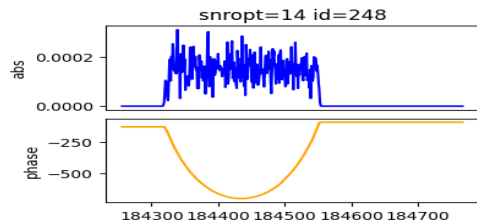
Jeu de données – CHIRP LIN

chirp_lin



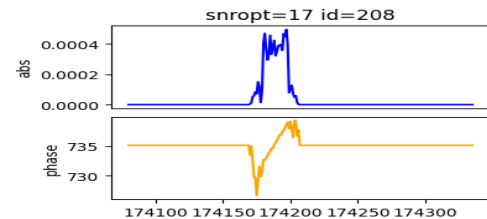
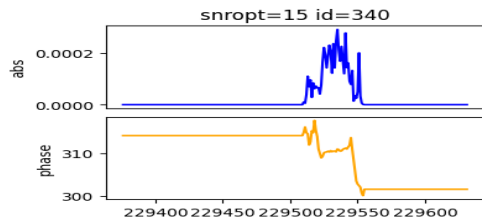
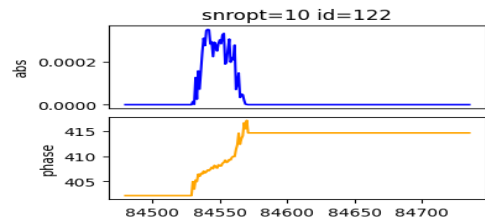
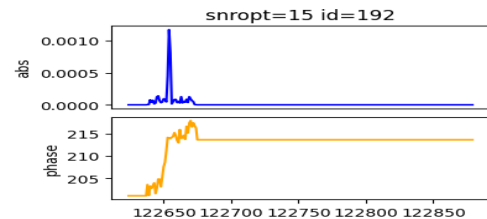
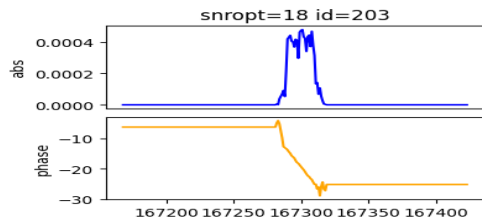
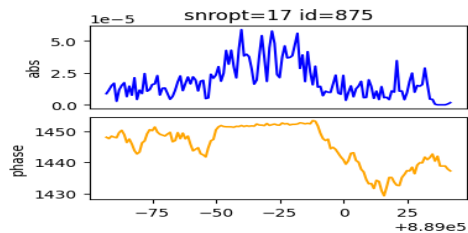
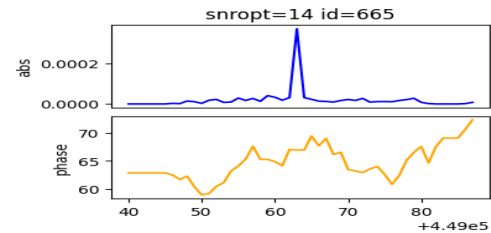
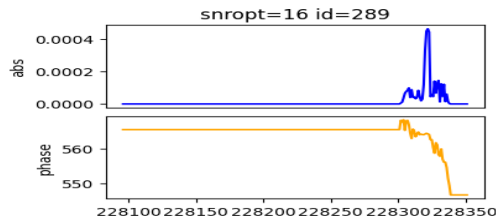
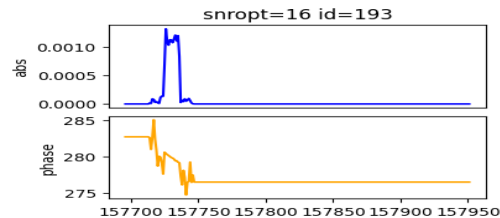
Jeu de données – CHIRP S

chirp_s



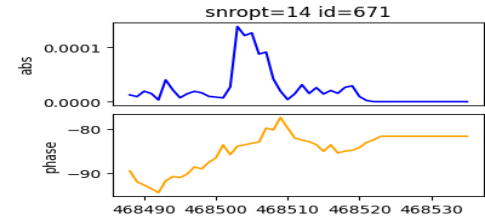
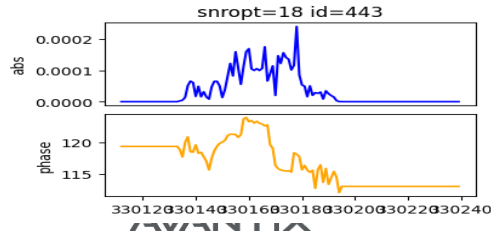
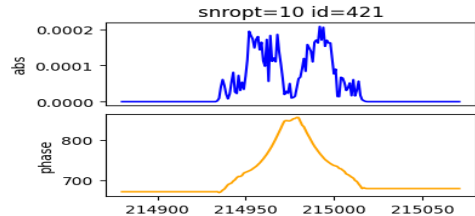
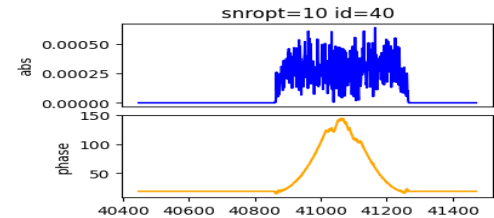
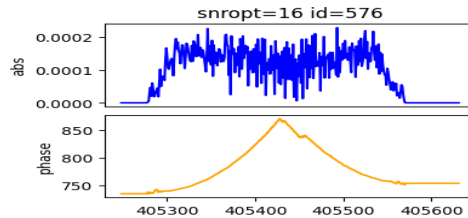
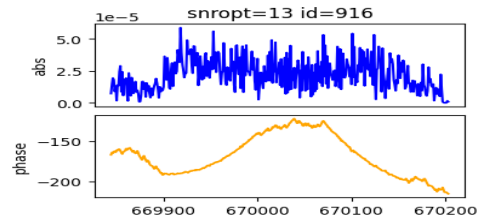
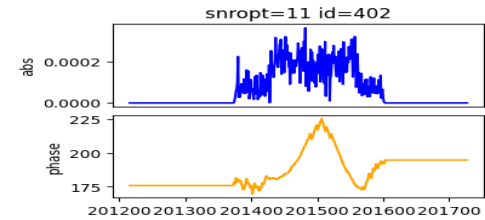
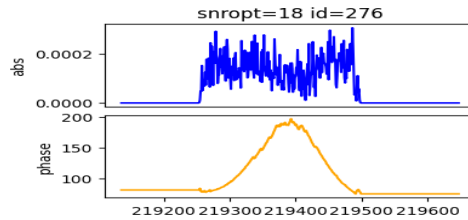
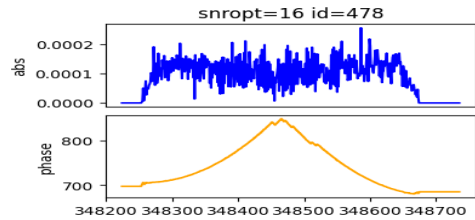
Jeu de données – NO MOD

no_mod



Jeu de données – PMOD

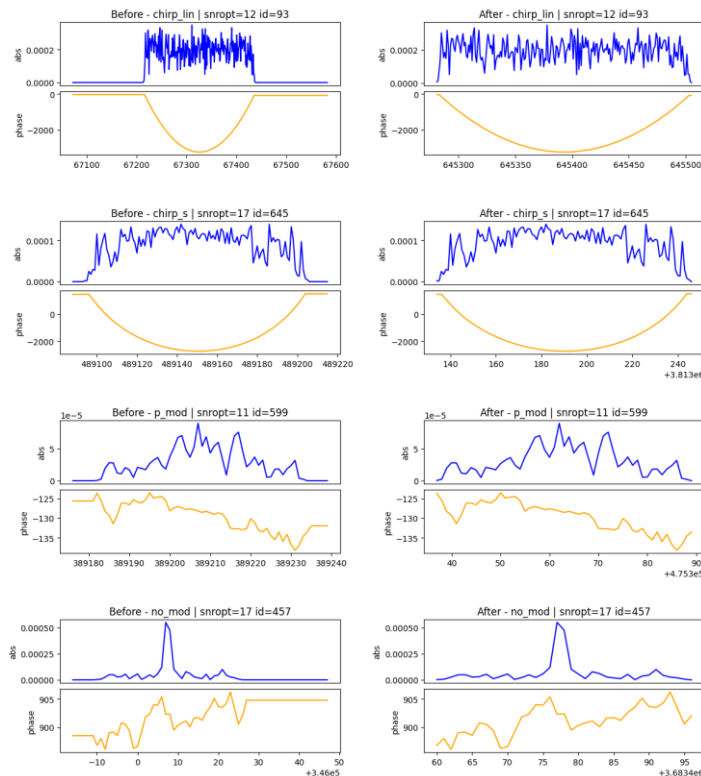
p_mod



Pré-nettoyage

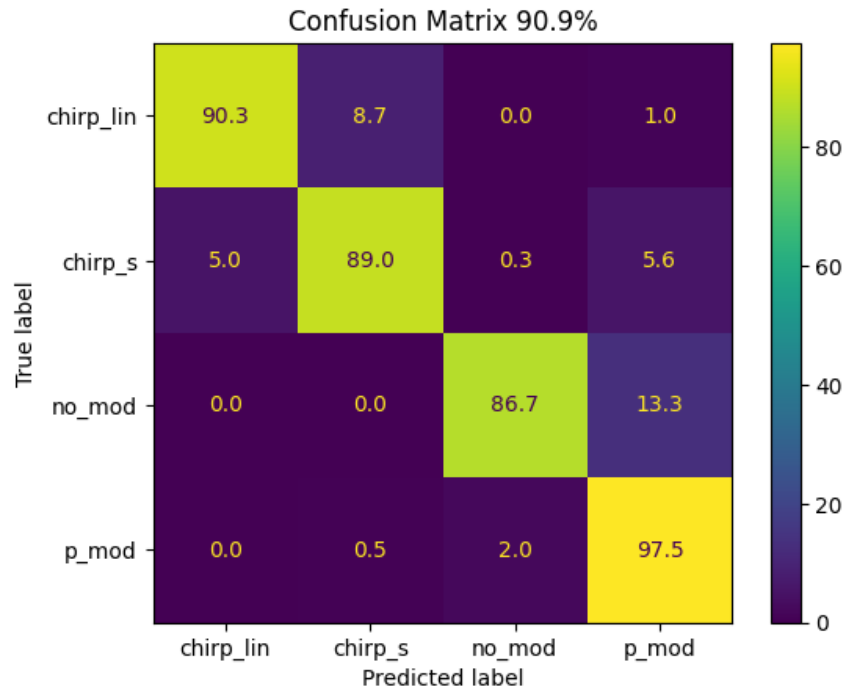
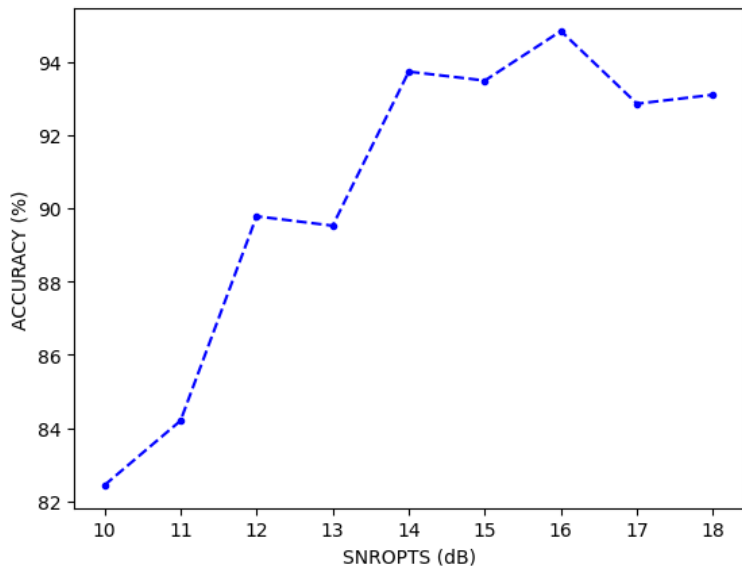
- Valeur absolue de la phase
- Suppression des échantillons où $abs == 0$ en début et fin de signal

With border (left) vs Without Border (after)



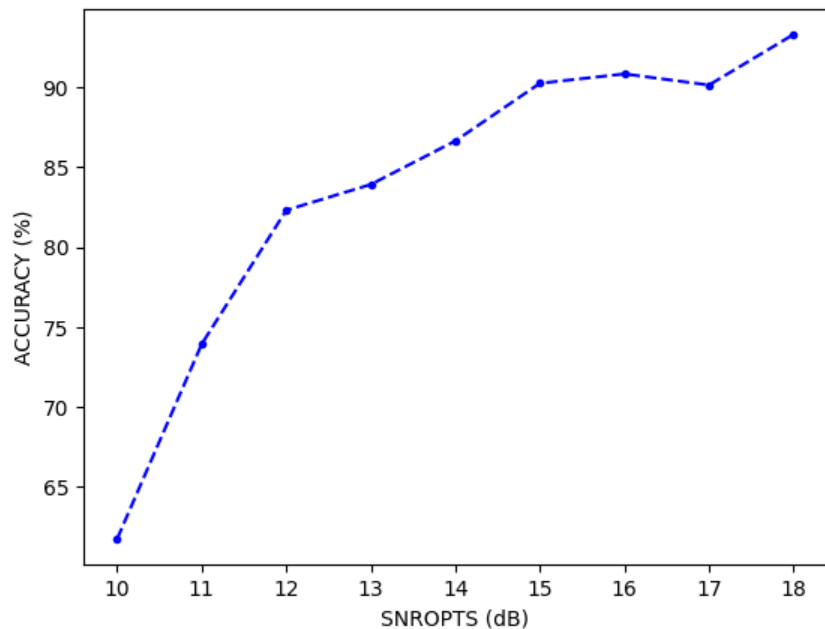
Features	Modèle	Acc %	Commentaires
TSFRESH Stratégie greedy	RF	90,9	Borne supérieure
FVE	DecisionTree FVE max-depth = 5 min_impurity_decrease=0.012	84,5	Deux DecisionTree entraînés par FVE : 1 pour les low et un pour les high snr
	DecisionTree	TODO	DecisionTree entraîné par CBE
	DecisionTree max-depth = 5	TODO	DecisionTree entraîné par CBE
	DecisionTree max-depth = 3	TODO	DecisionTree entraîné par CBE
TSFRESH Top 10 A vérifier si ces feats sont rapides à calculer	RF	84,1	L'objectif était de voir la perte en perf en ne conservant que 10 feats pour optimiser le RTR
	DecisionTree	80,1	
	DecisionTree Max-depth = 5	79,1	
	DecisionTree Max-depth = 3	77,3	
Polyfit degré 2 Rapide à calculer. Possibilité d'implémentation GPU			
	DecisionTree Max-depth = 5	84,3	

EfficientFCParameters (1554 cols)+ RandomForest (borne supérieure)

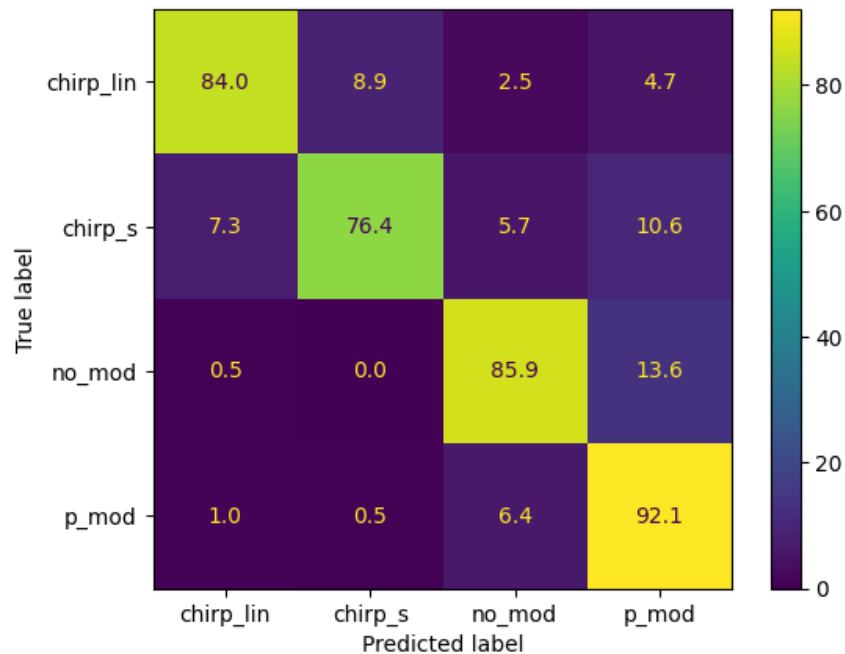


Perf FVE - Baseline

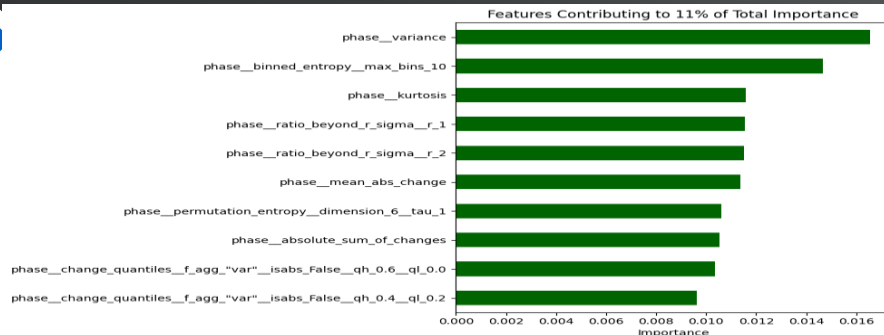
PERF FVE



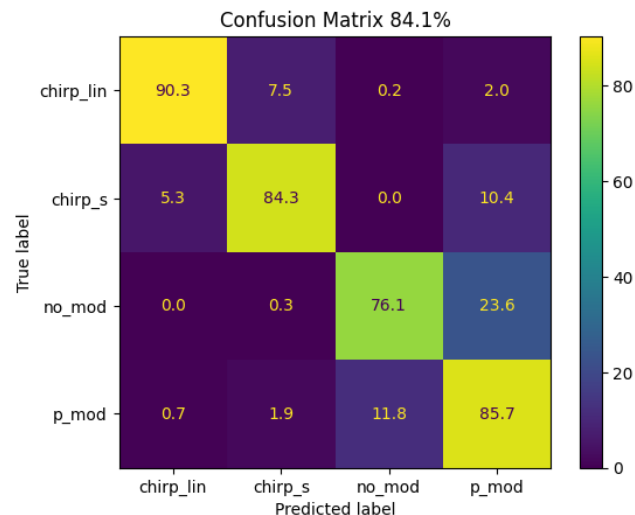
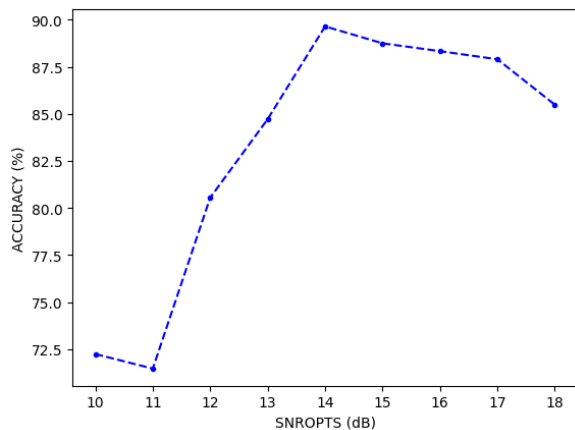
Confusion Matrix PRED FVE 84.6%



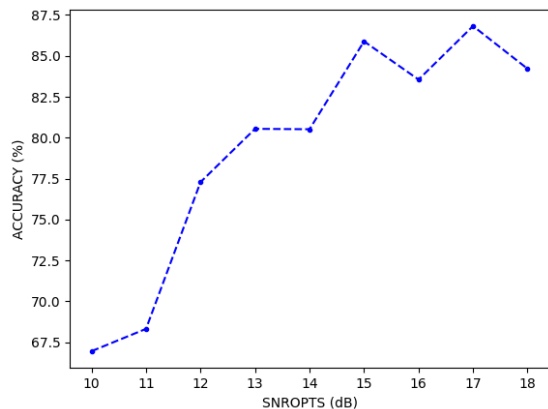
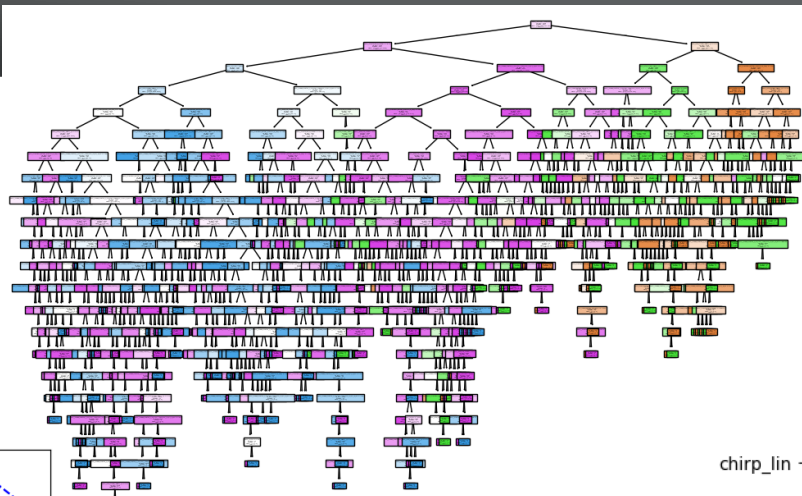
EfficientFCParameters Top 10 + RandomForest



N'inclut que des stats issues de la phase.
Vérifier qu'elles sont « efficient »

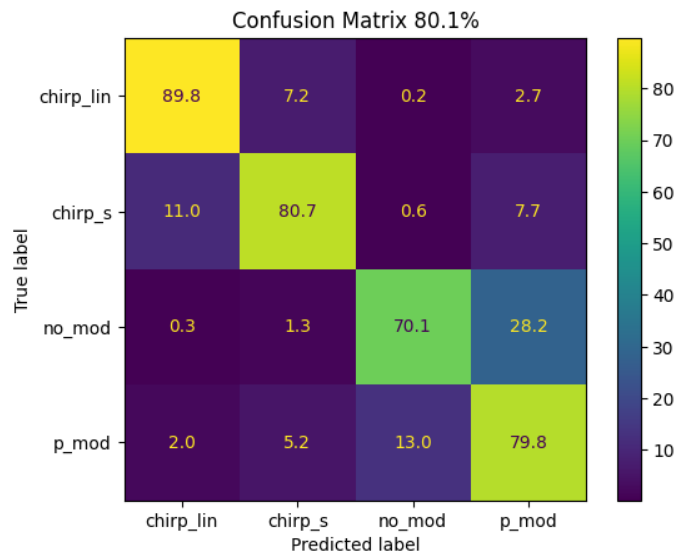


EfficientFCParameters Top 10 + DecisionTree max-depth=None

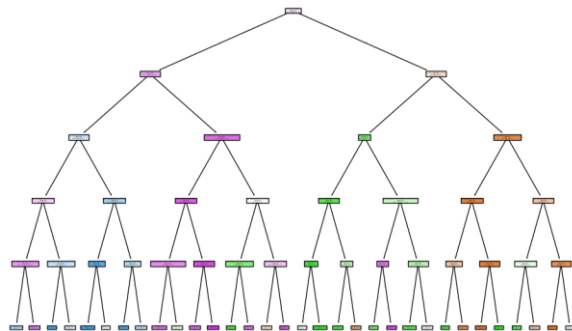


20/09/2023

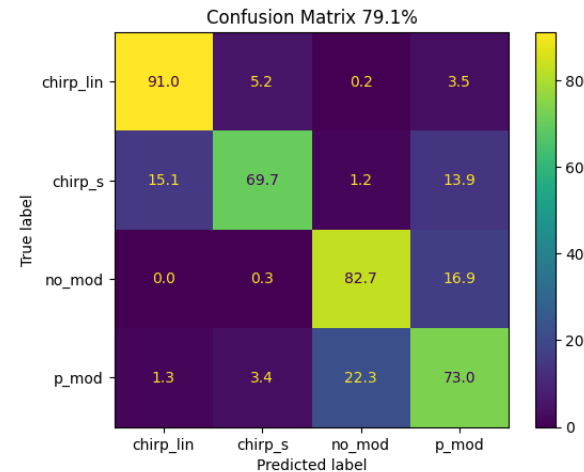
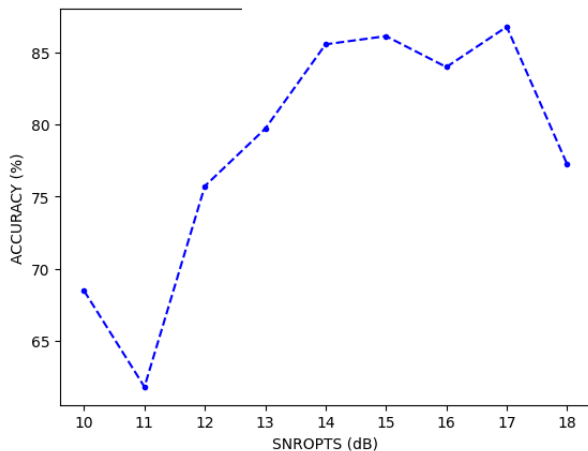
AVANTIX



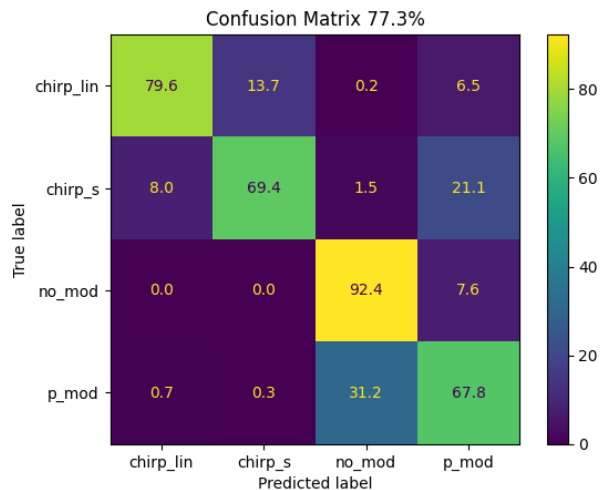
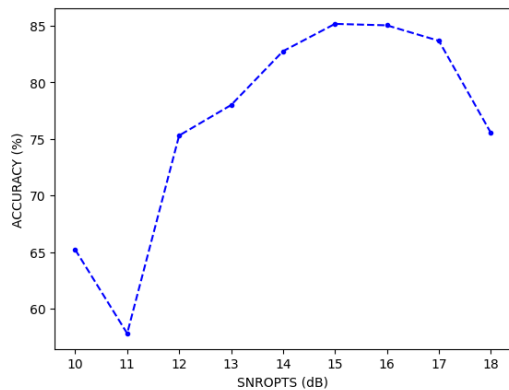
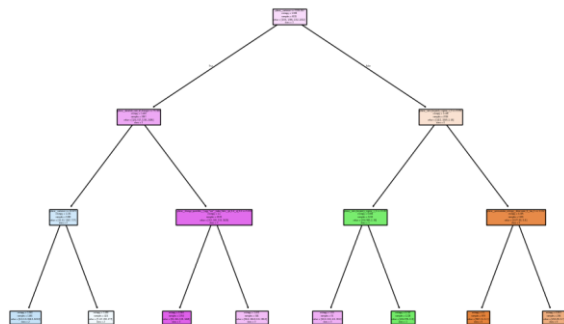
EfficientFCParameters Top 10 + DecisionTree max-depth=5



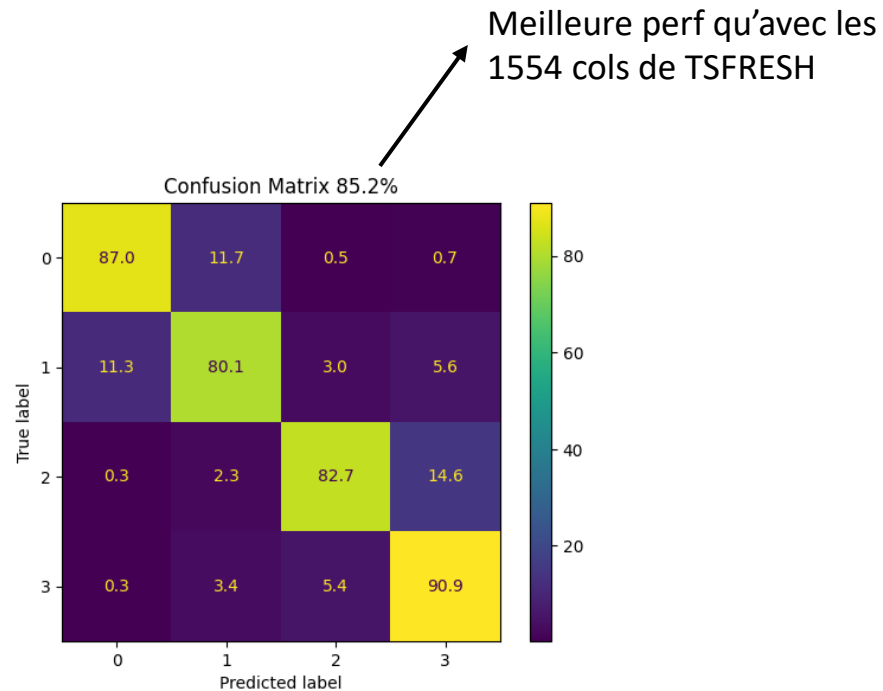
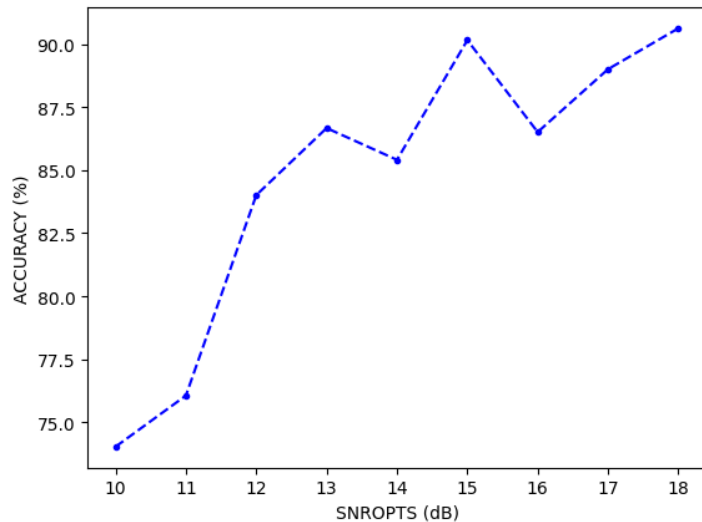
On ne perd qu'un 1pt de %
par rapport au modèle
précédent et n'inclus
« que » 30 comparaisons



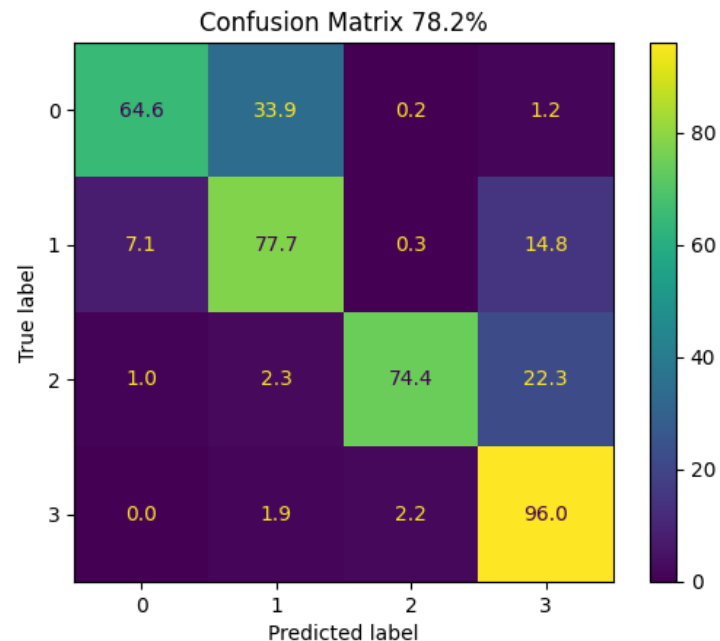
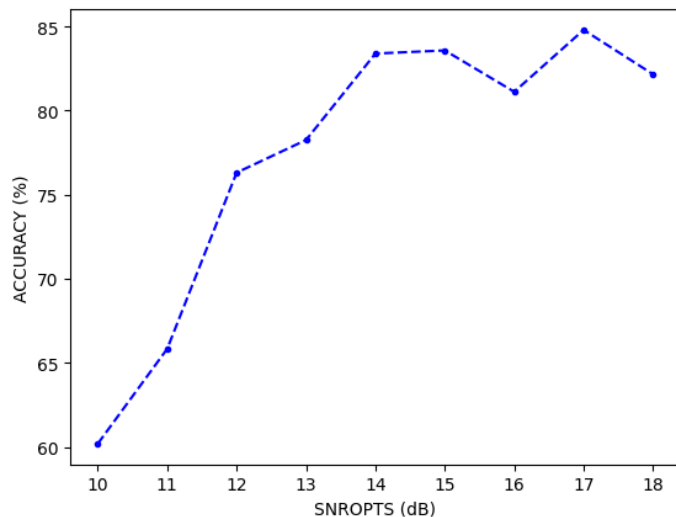
EfficientFCParameters Top 10 + DecisionTree max-depth=3



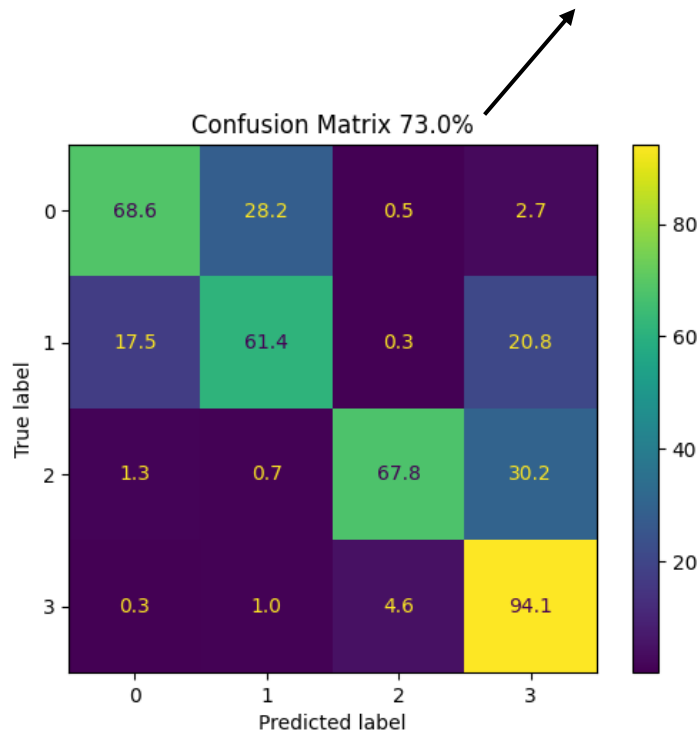
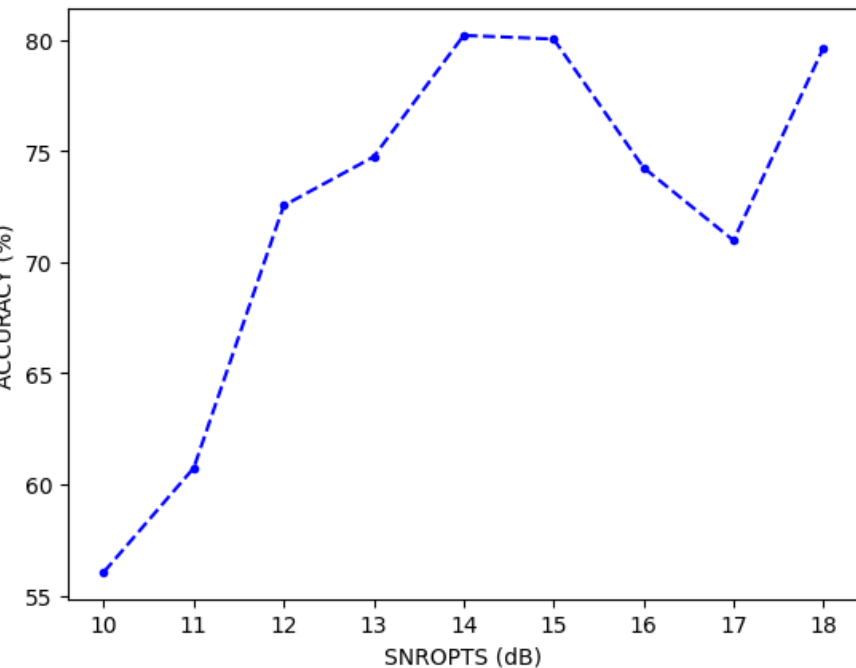
Polyfit degré 4 + DecisionTree max-depth=None



Polyfit degré 4 + DecisionTree max-depth=5



Polyfit degré 4 + DecisionTree max-depth=3



AVANTIX

MERCI