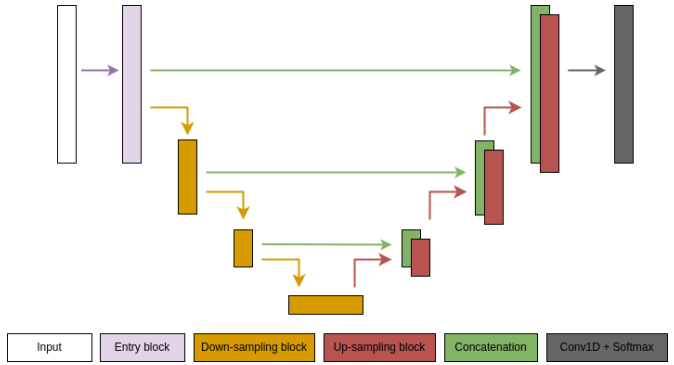
Summary

Method

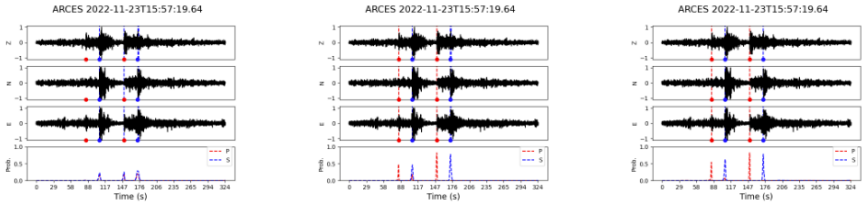


- PhaseNet (1D UNet) architecture.
- Modifications of down- and up-sampling blocks introduce new models, e.g., vanilla convolution is replaced with ResNet style blocks.
- Baselines: PhaseNet, EPick, EQTransformer.
- Block styles: ResNet, Dynamic convolution, transformers.
- Model size variations.

Results

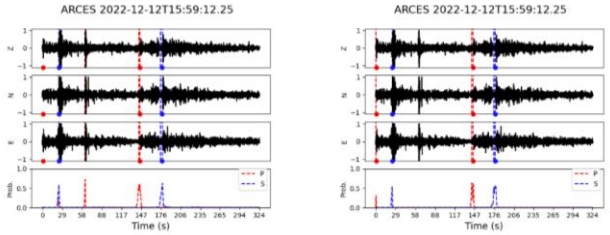
Model (τ)	Precision (P/S) ↑	Recall (P/S) ↑	F_1 (P/S) ↑	Mean Residual (P/S) ↓	JSD (P/S) ↓
PhaseNetS (0.05)	0.36/0.70	0.34/0.71	0.35/0.70	$-21.6/0.08s$	0.60/0.50
PhaseNetM (0.05)	0.82/0.76	0.80/0.74	0.81/0.75	$-2.33/0.40s$	0.36/0.43
PhaseNetL (0.05)	0.82/0.79	0.80/0.78	0.81/0.78	$-1.28/-0.28s$	0.39/0.44
EQTransformerM (0.05)	0.71/0.61	0.68/0.60	0.69/0.61	$-1.66/-2.34s$	0.53/0.52
EQTransformerL (0.05)	0.75/0.65	0.72/0.65	0.74/0.65	$-0.94/-0.94s$	0.51/0.52
EPick (0.05)	0.81/0.78	0.79/0.78	0.80/0.78	$-0.65/-0.22s$	0.34/0.38
DPhaseNet (0.05)	0.80/0.66	0.59/0.67	0.68/0.66	$-0.65/0.15s$	0.44/0.46
RPhaseNet (0.05)	0.87/0.80	0.85/0.80	0.86/0.80	$0.19/0.26s$	0.28/0.39
TPhaseNet (0.05)	0.86/0.82	0.86/0.83	0.86/0.83	$0.27/0.11s$	**0.28/0.37**
PTPhaseNetS (0.15)	**0.86/0.86**	**0.86/0.87**	**0.86/0.87**	$-0.12/0.39s$	0.51/0.52
PTPhaseNetL (0.05)	**0.87/0.85**	0.87/0.85	0.87/0.85	**0.17/0.15s**	0.30/0.38

Ours



(a) PhaseNetS (b) PhaseNetM (c) PhaseNetL

Model size



(a) PhaseNetL (b) TPhaseNet

Transformer

- Predictions break down at small model sizes.
- Transformers improves context awareness.
- PhaseNet confuses P and S order.
- Not the case for transformer based method.

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