

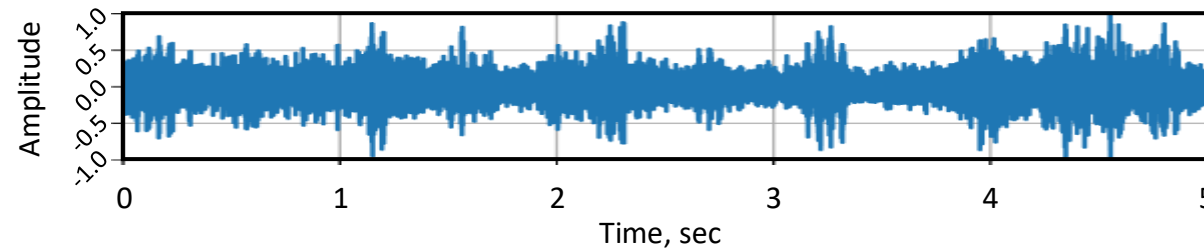
ESResNet: Environmental Sound Classification Based on Visual Domain Models

Andrey Guzhov, Federico Raue, Jörn Hees, Andreas Dengel

In Proceedings of ICPR 2020

Task

Environmental Sound Classification



Cat



...

Alarm Clock



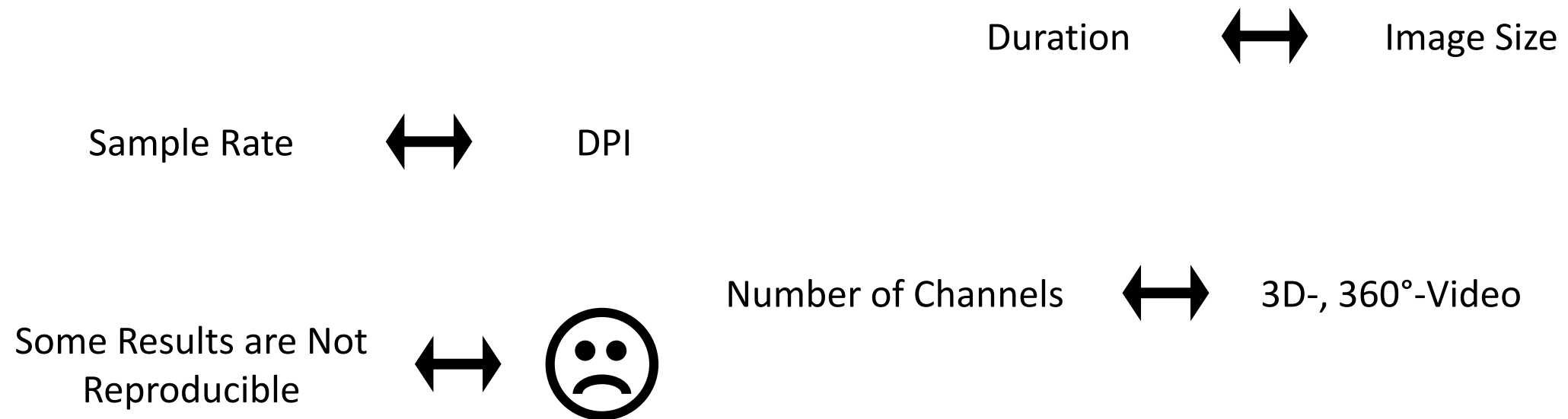
Siren



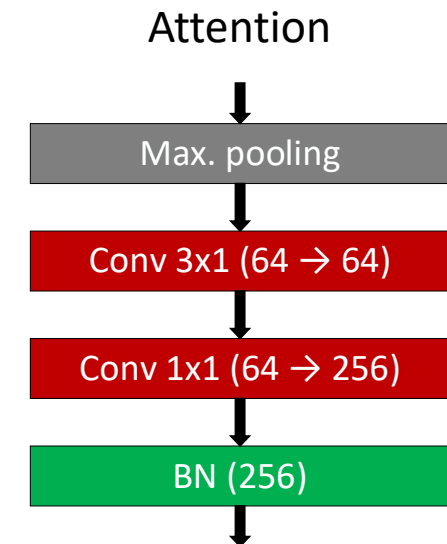
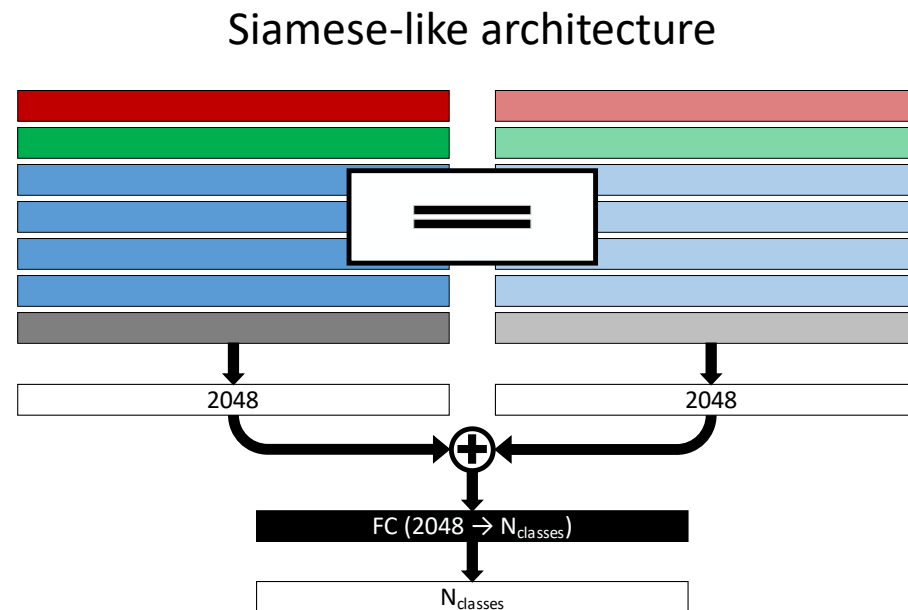
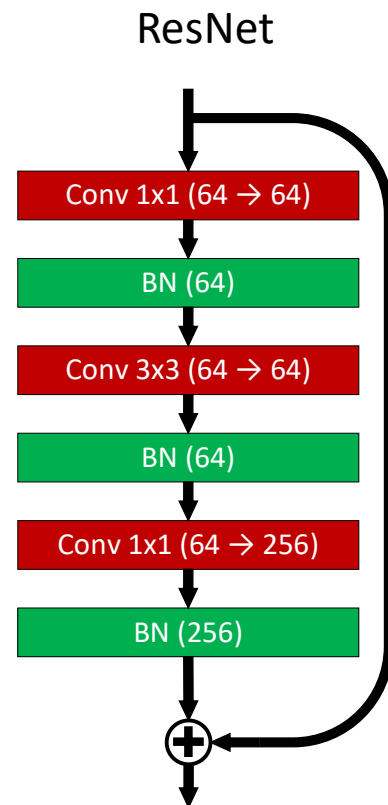
Task

Environmental Sound Classification

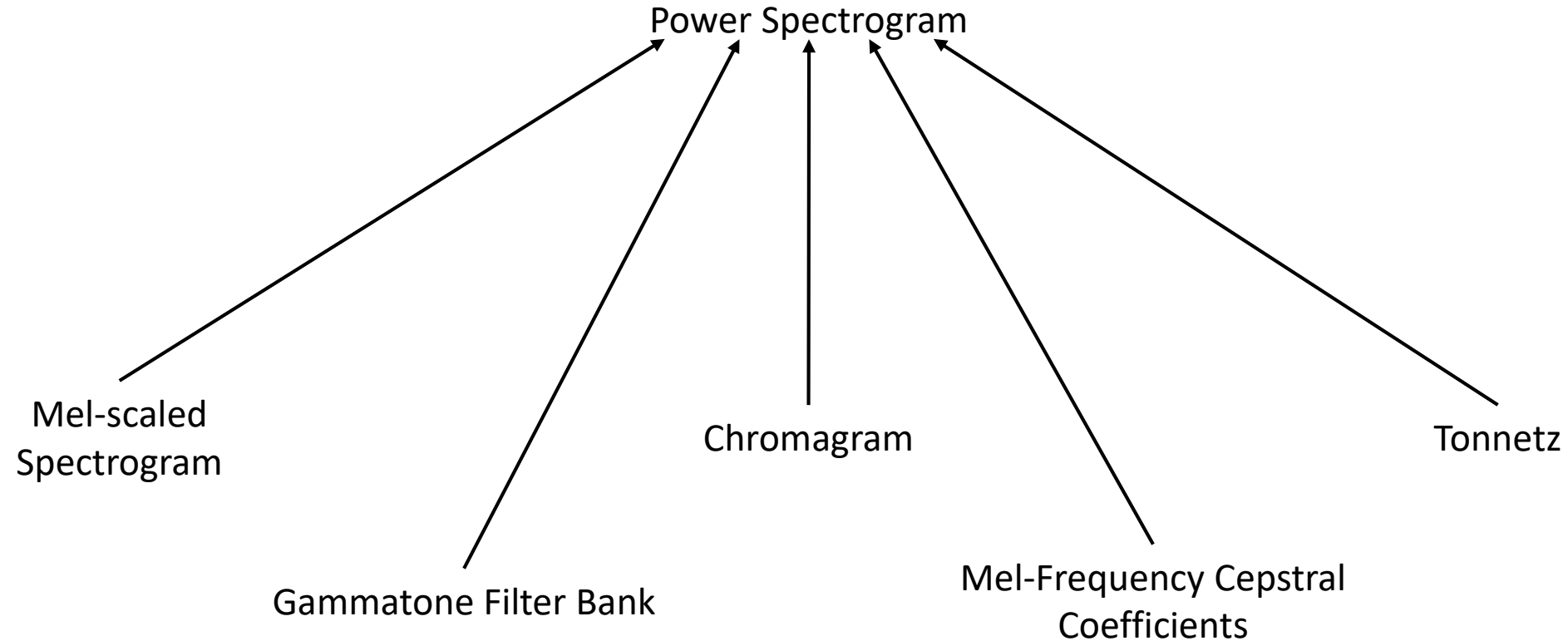
Challenges



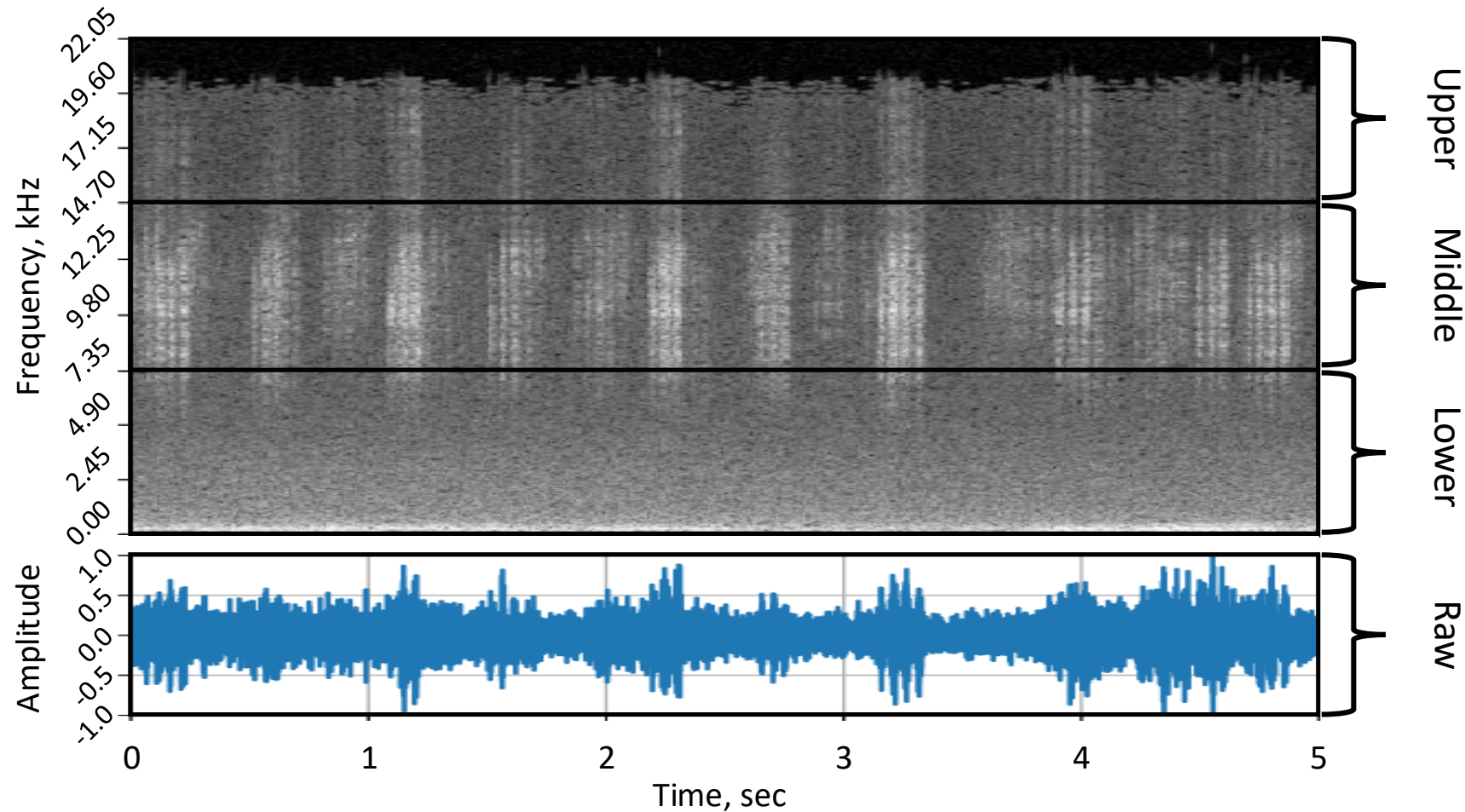
Applying Visual Tools



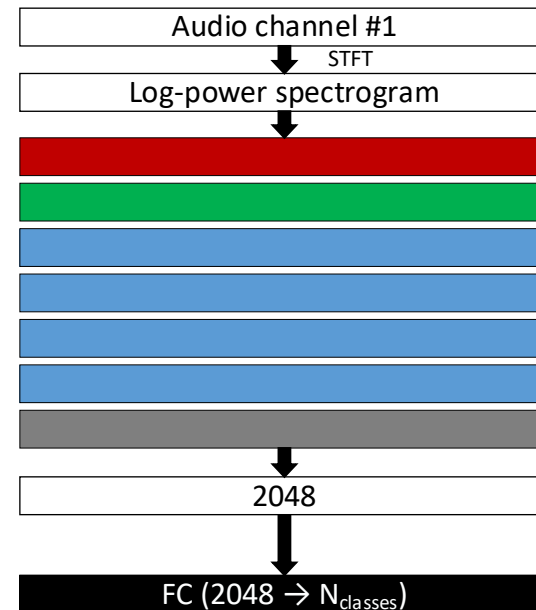
Signal Representation



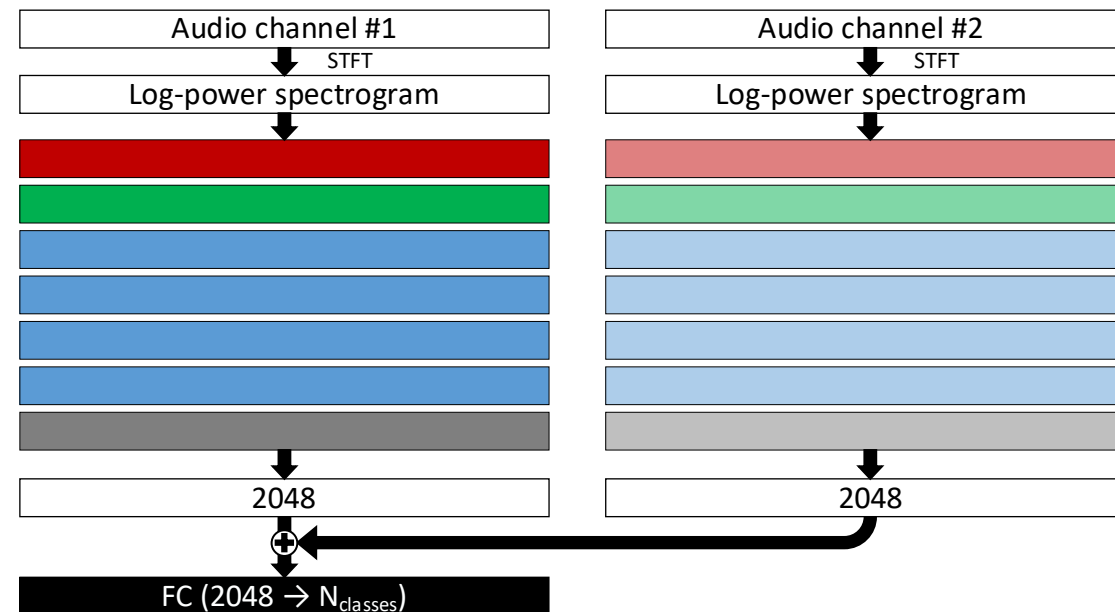
Input Layout



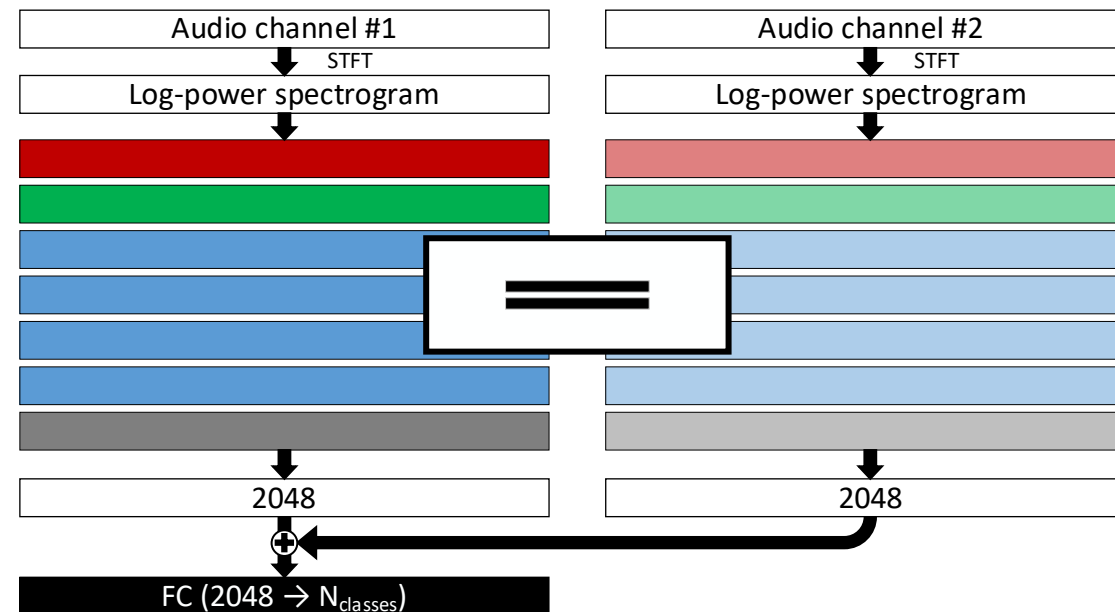
Multichannel Processing



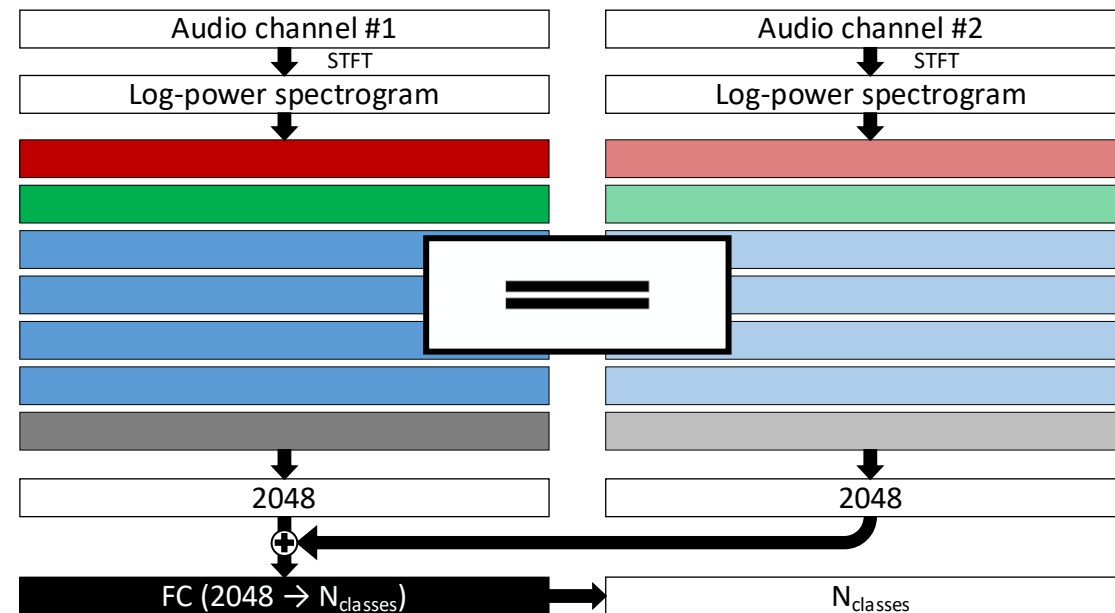
Multichannel Processing



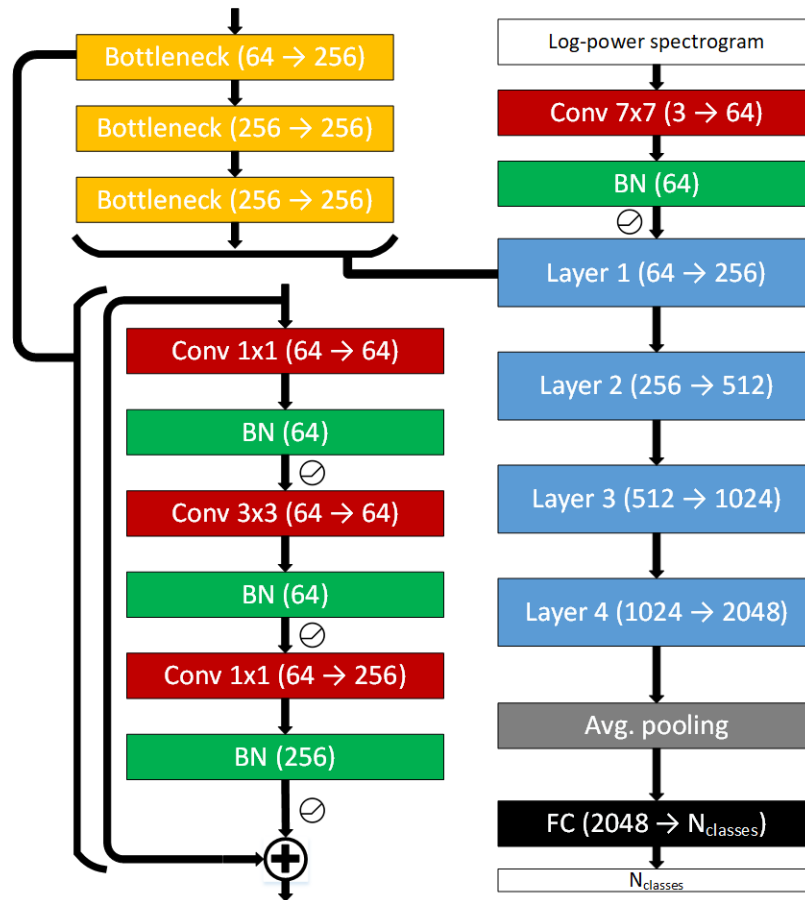
Multichannel Processing



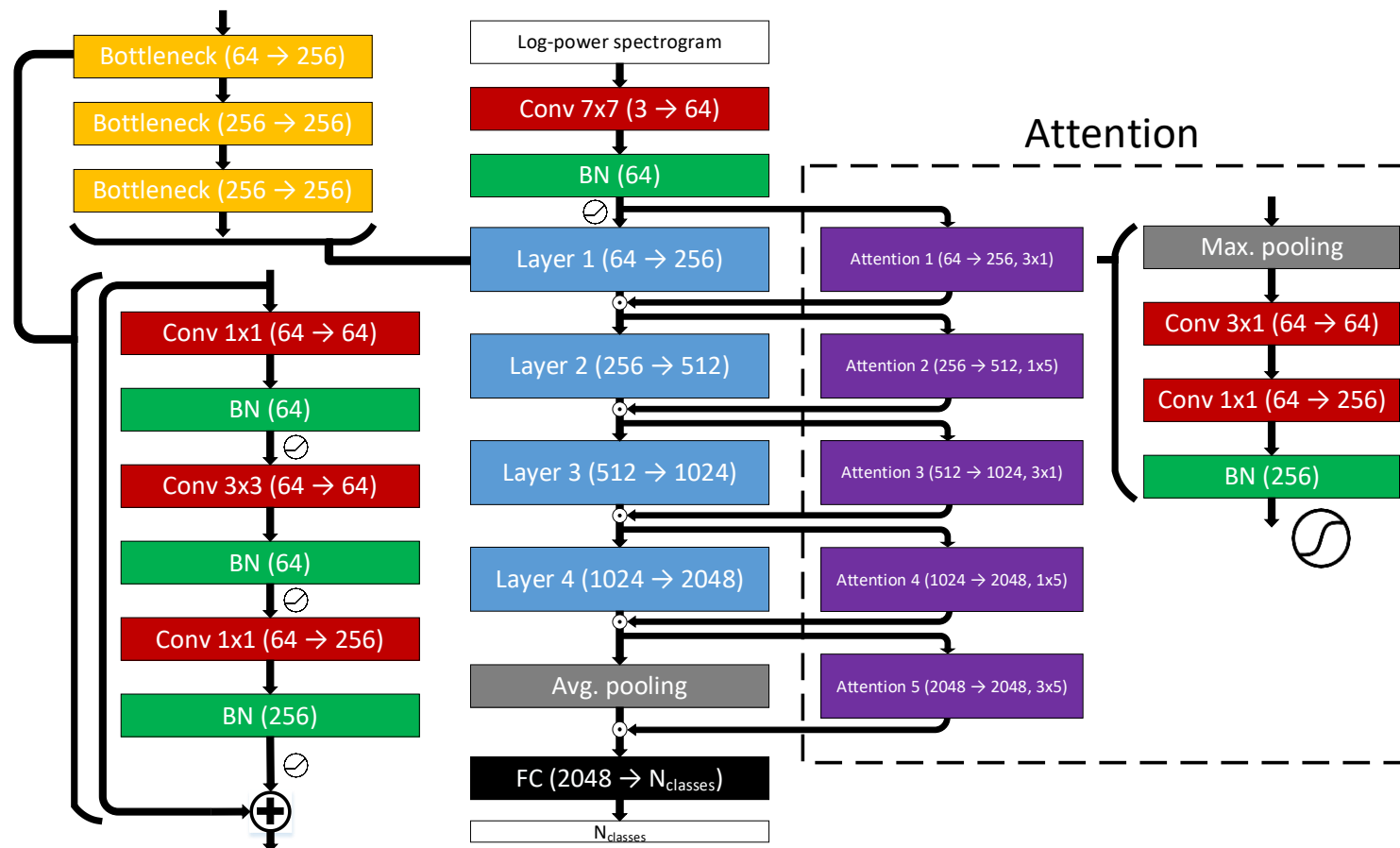
Multichannel Processing



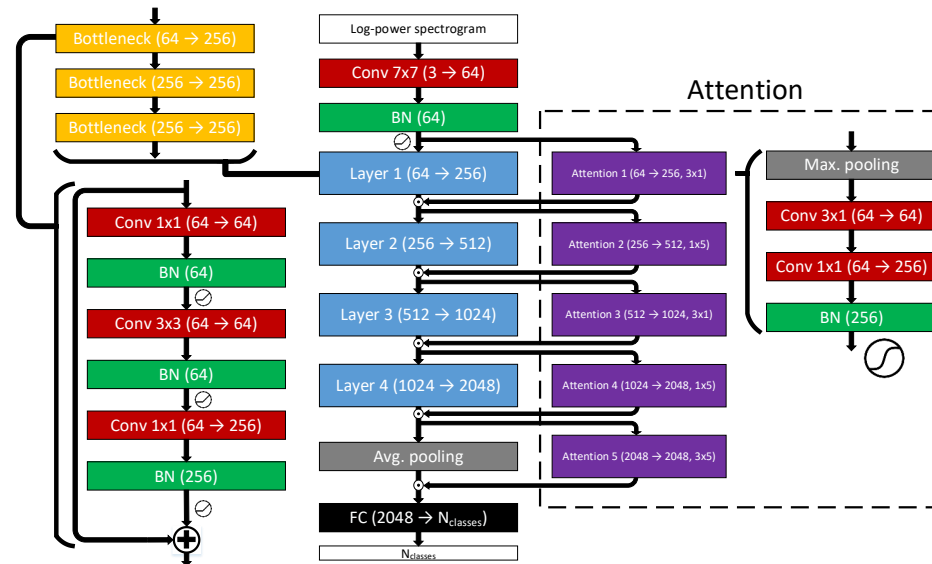
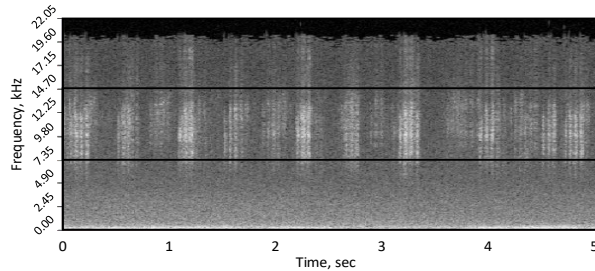
Attention



Attention

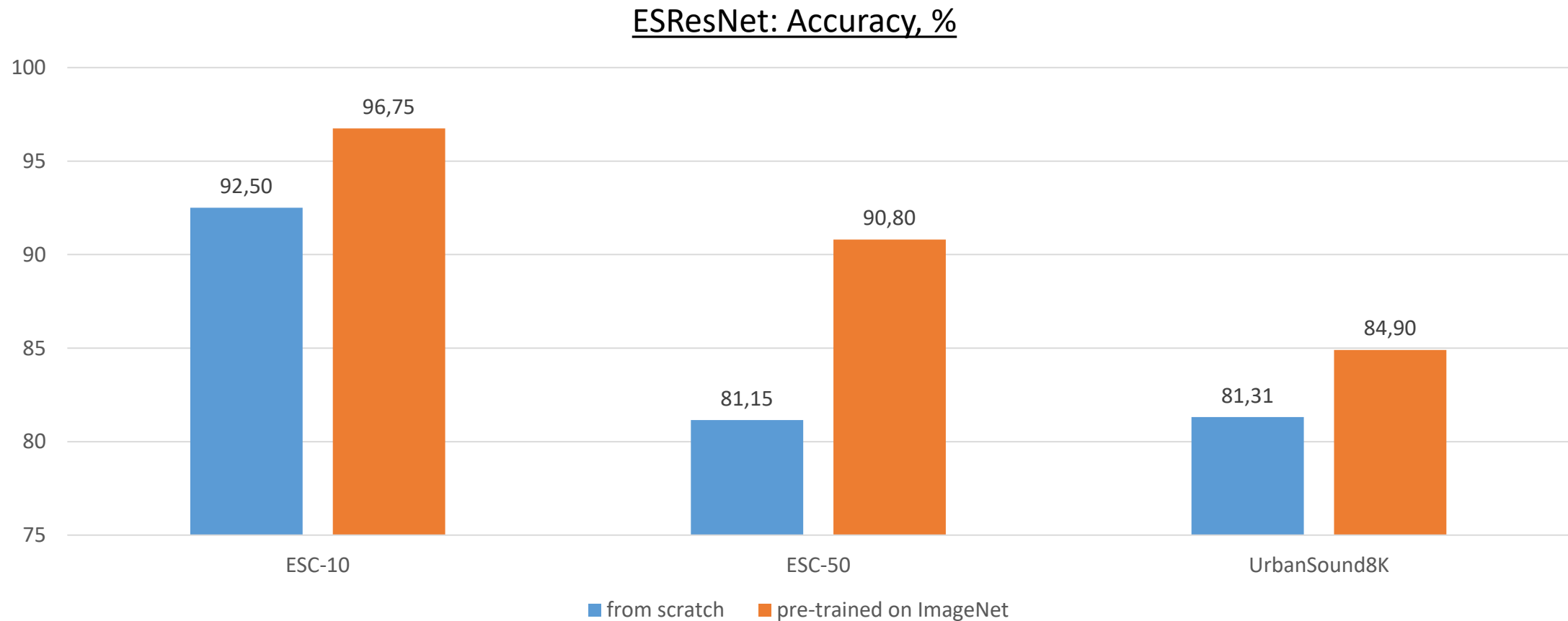


Results

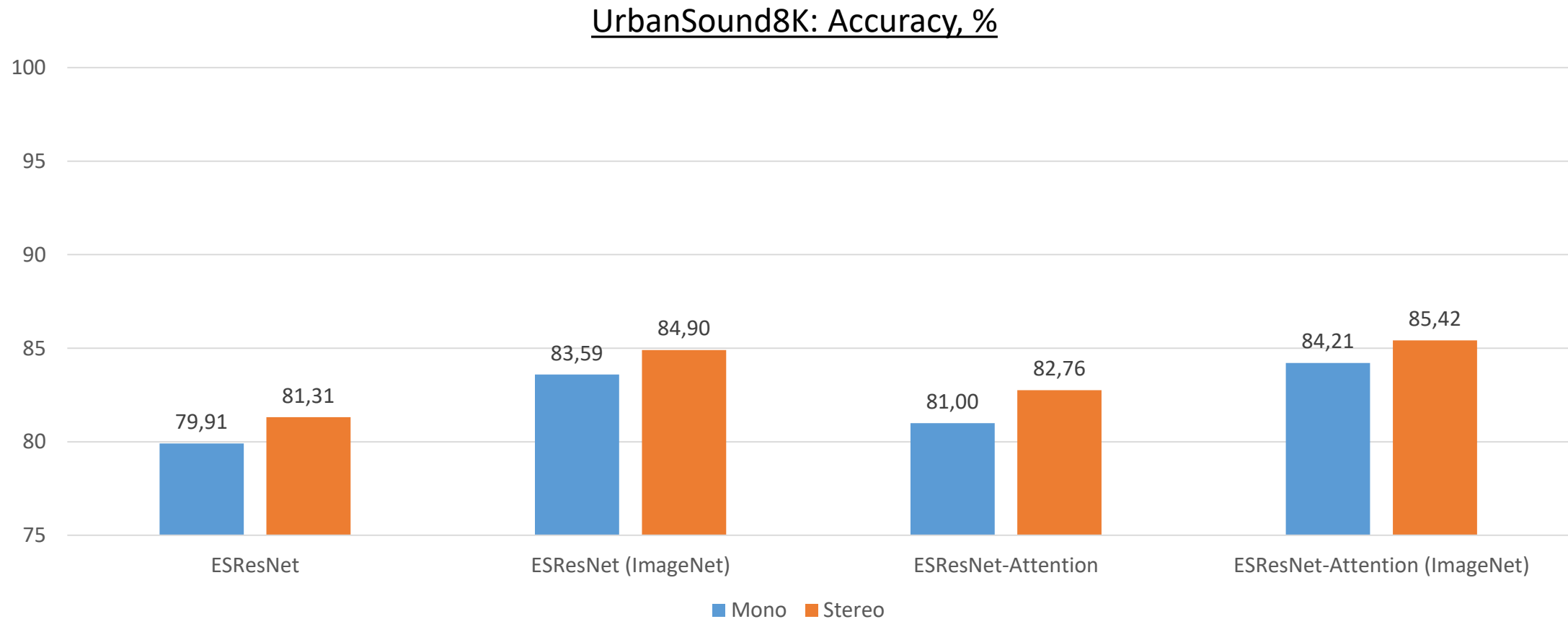


State-of-The-Art*
Performance

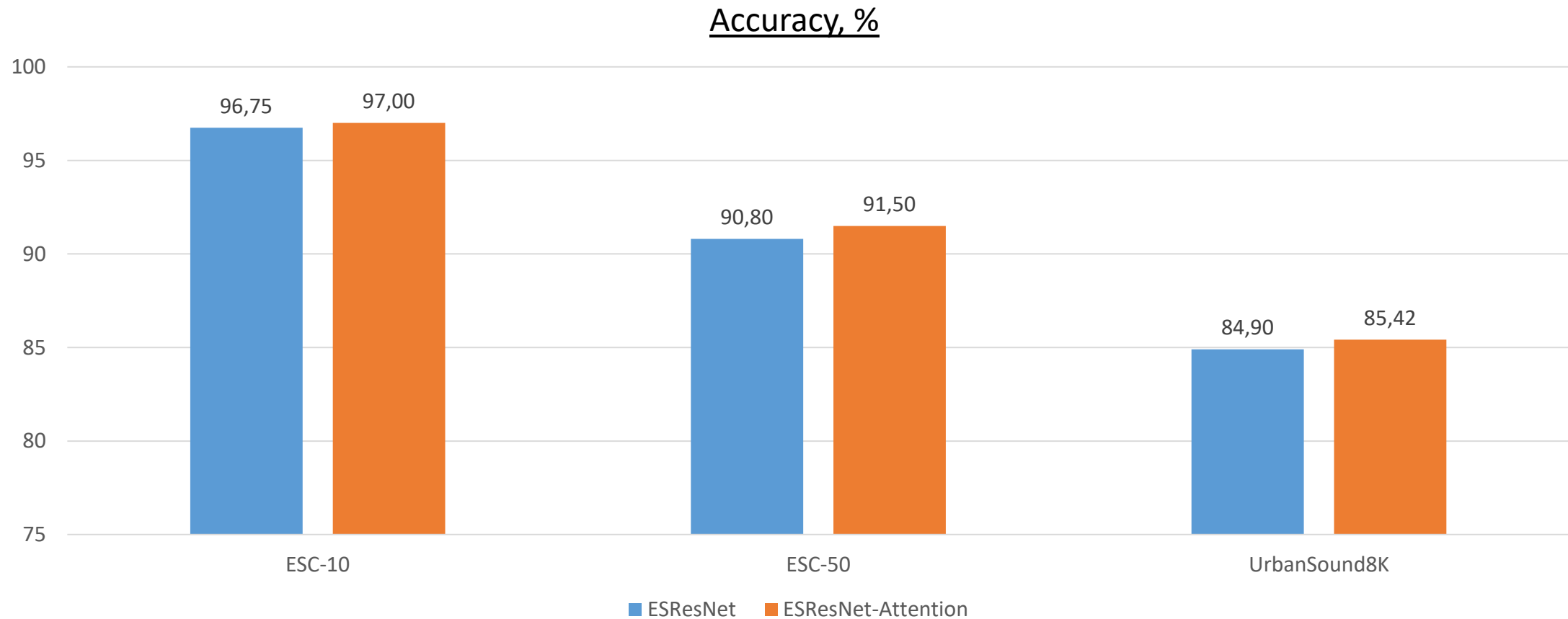
Impact of the ImageNet Pre-Training



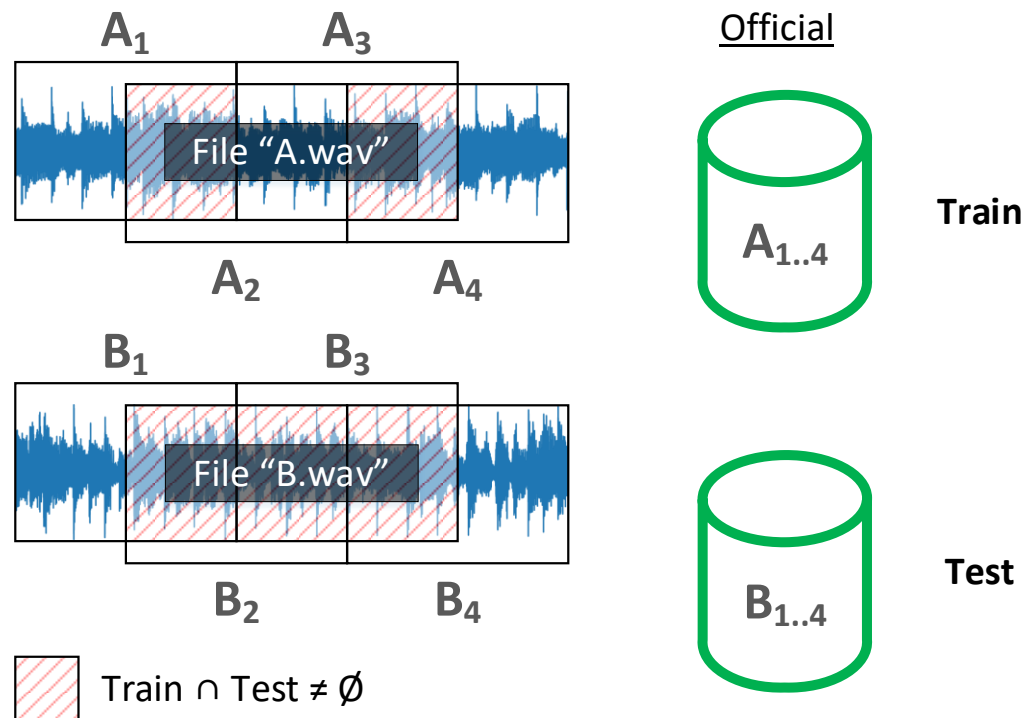
Impact of the Multichannel Processing



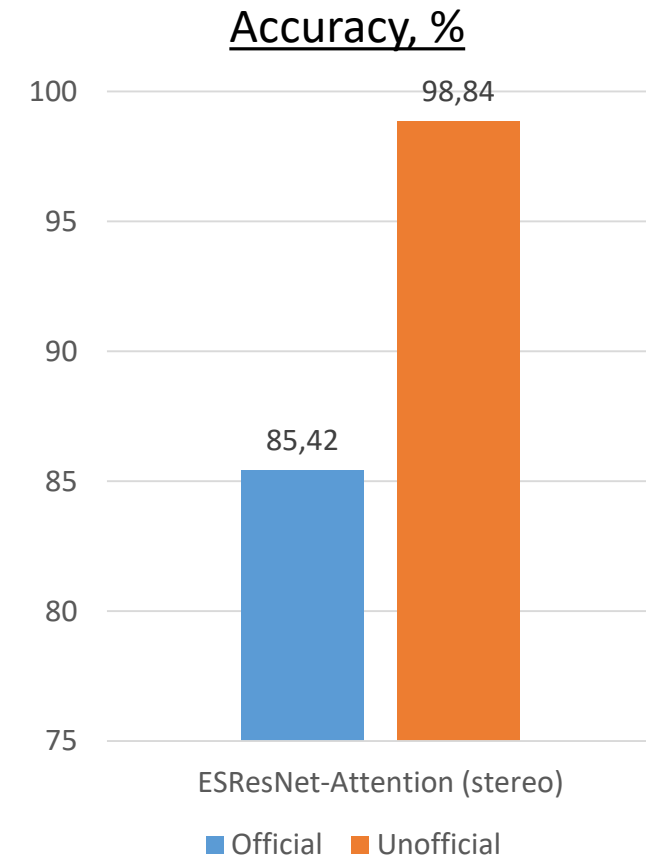
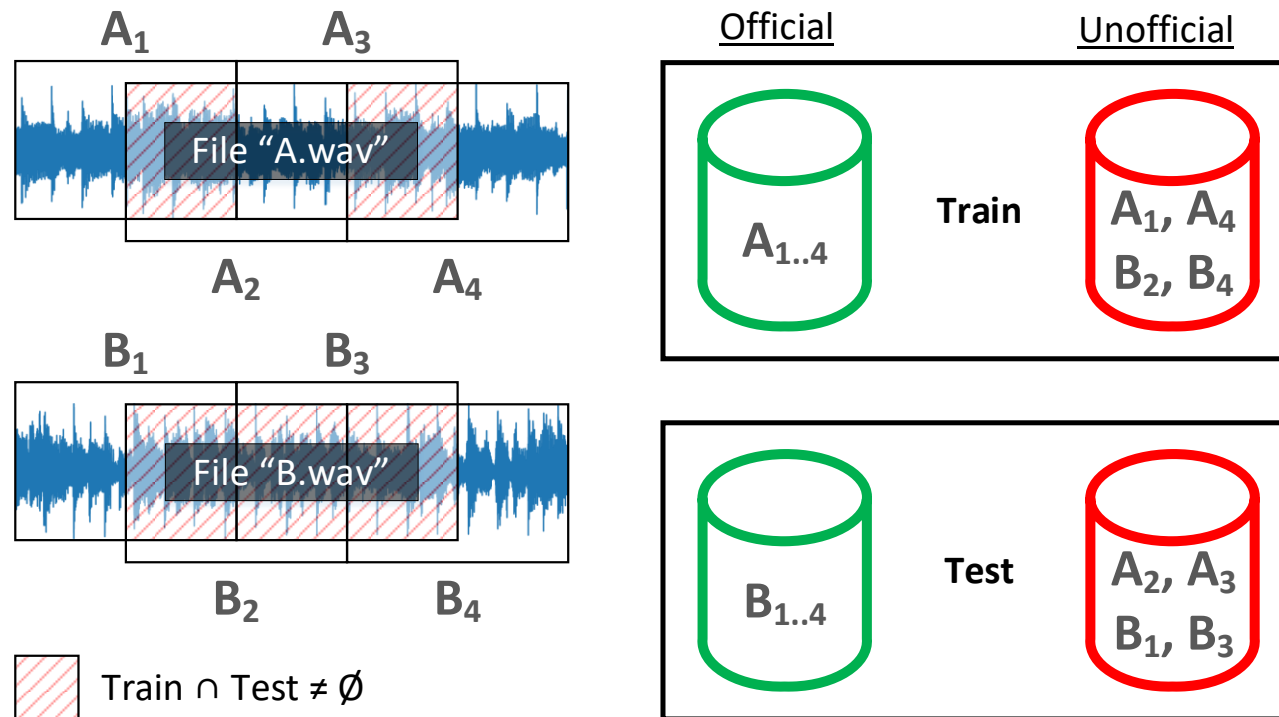
Impact of the Attention Blocks



Reproducibility



Reproducibility



Thank You!

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