SON HAI NGUYEN

APPROXIMATION OF SOUND PROPAGATION BY NEURAL NETWORK | EUGENE

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OBJECTIVE
§1.1 Solve Helmholtz Equation
§1.2 Why?
The transcranial ultrasound therapy is a non-invasive procedure, which can be used in the treatment of essential tremor, Parkinson’s disease, Alzheimer’s disease and brain tumor.

PROPOSED SOLUTION
§2.1 Model Scheme
Inputs
Graph Network
Output

§2.2 Graph Network Scheme

RESULTS
§3.1 Generalization
Model was trained only on the data with a single wave-source.

§3.2 Unroll Stability
Although, the model is only trained with 6 unroll iterations, the model does not diverge until the 70-th iteration.

§3.3 Downsampled Derivative

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