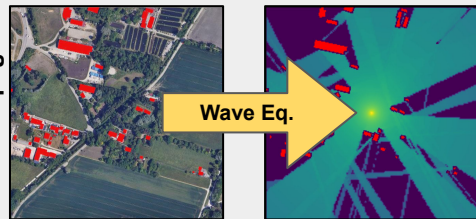


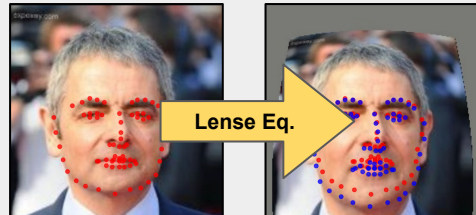
Physical Simulations

Sound Propagation Lens Distortion Motion Prediction

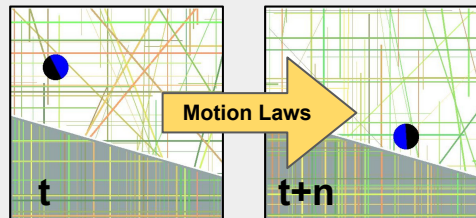


Wave Eq.

A ground truth



Lense Eq.



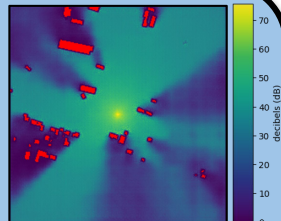
Motion Laws

Learn from Image Pairs

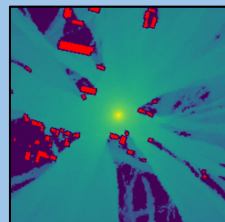
physical correct predictions

Train Generative Models

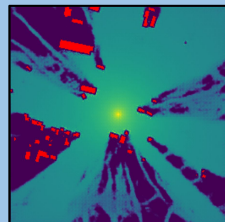
U-Net



DDPM



GAN

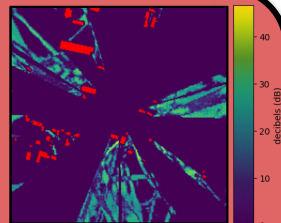


Generative Models

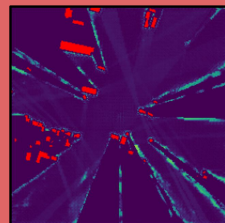
B

Evaluate Correctness

2nd Order



1st Order



Error Analysis

error net	1st order component	2nd order component
U-Net	12.75%	80.46%
DDPM	17.85%	80.38%
GAN	11.30%	30.67%

C