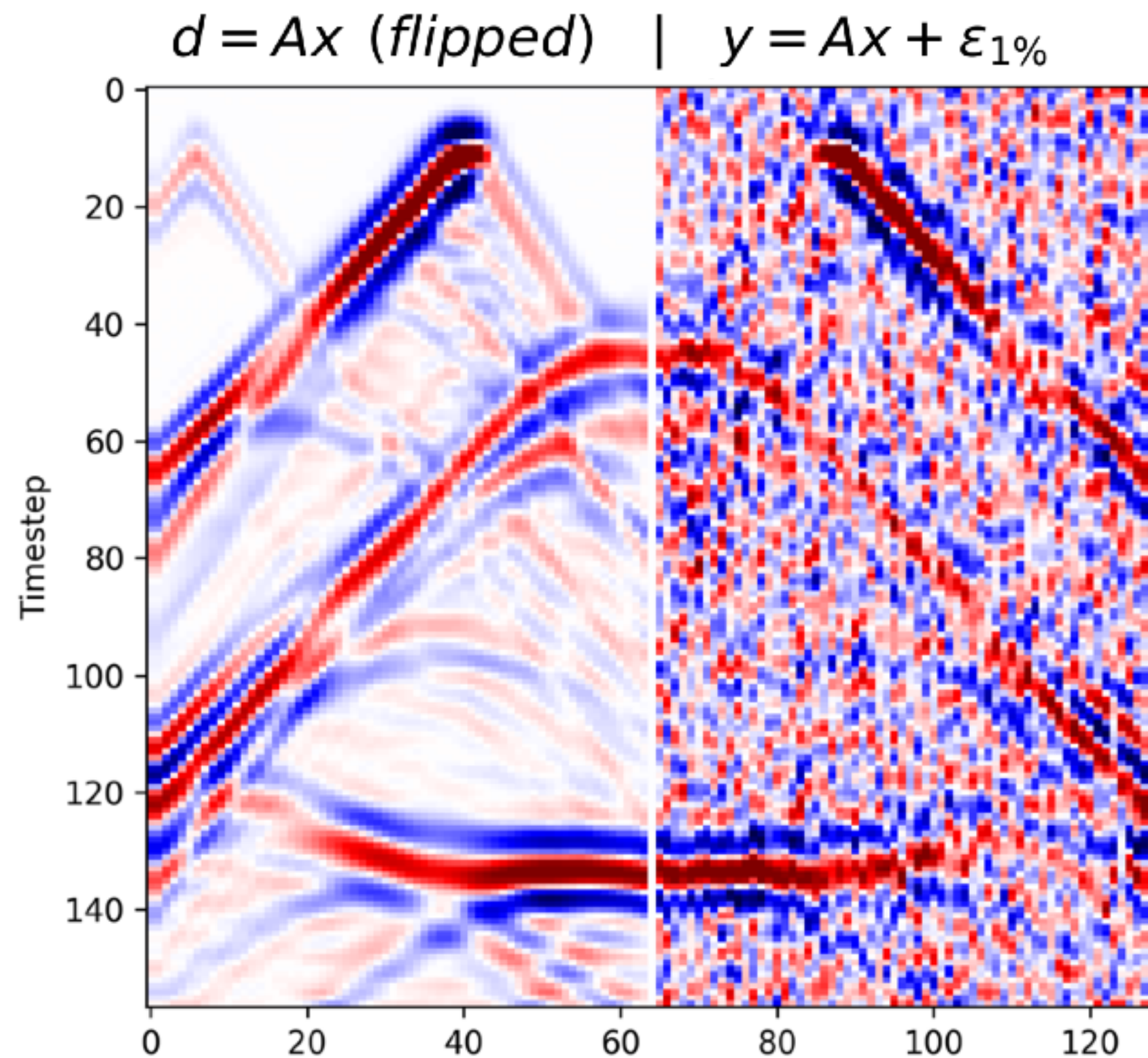
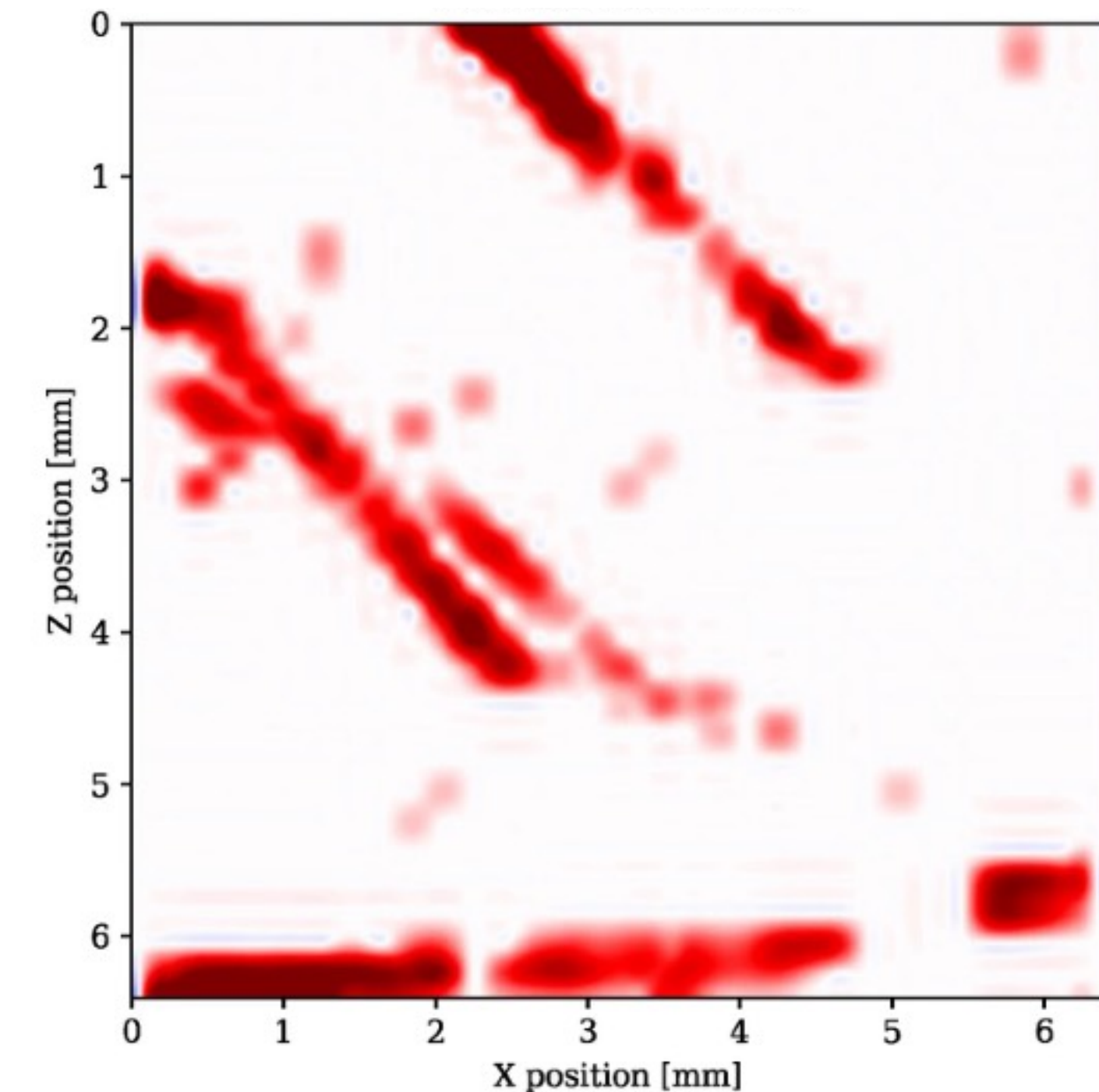


# Inverse Problem

Given acoustic data at receivers calculate acoustic pressure at  $T = 0$



Invert data that is noisy, sparse & from limited view receiver geometry



$$\operatorname{argmin}_{\mathbf{x}} \frac{1}{2} \|\mathbf{Ax} - \mathbf{d}\|_2^2 + \log R(\mathbf{x})$$



# MAP Optimization with NFs

Results with photoacoustic medical imaging reconstruction. Operator A is a forward wave solve representing ultrasound wave propagation

$$\operatorname{argmin}_{\mathbf{x}} \frac{1}{2} \|A\mathbf{x} - \mathbf{d}\|_2^2 + \log R(\mathbf{x})$$

$$\operatorname{argmin}_{\mathbf{z}} \frac{1}{2} \|AG_{\theta}(\mathbf{z}) - \mathbf{d}\|_2^2 + \frac{1}{2} \|\mathbf{z}\|_2^2$$

