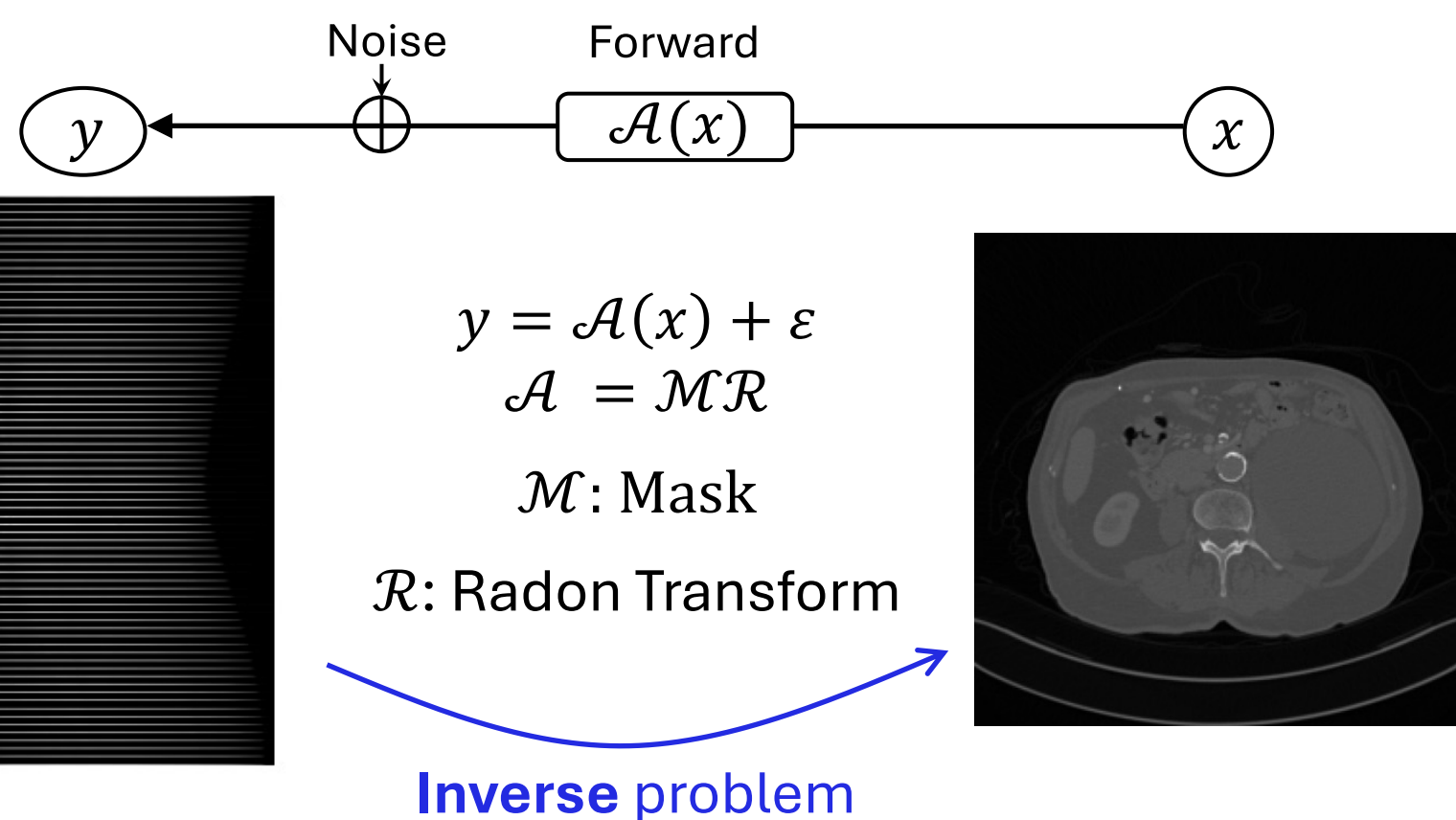




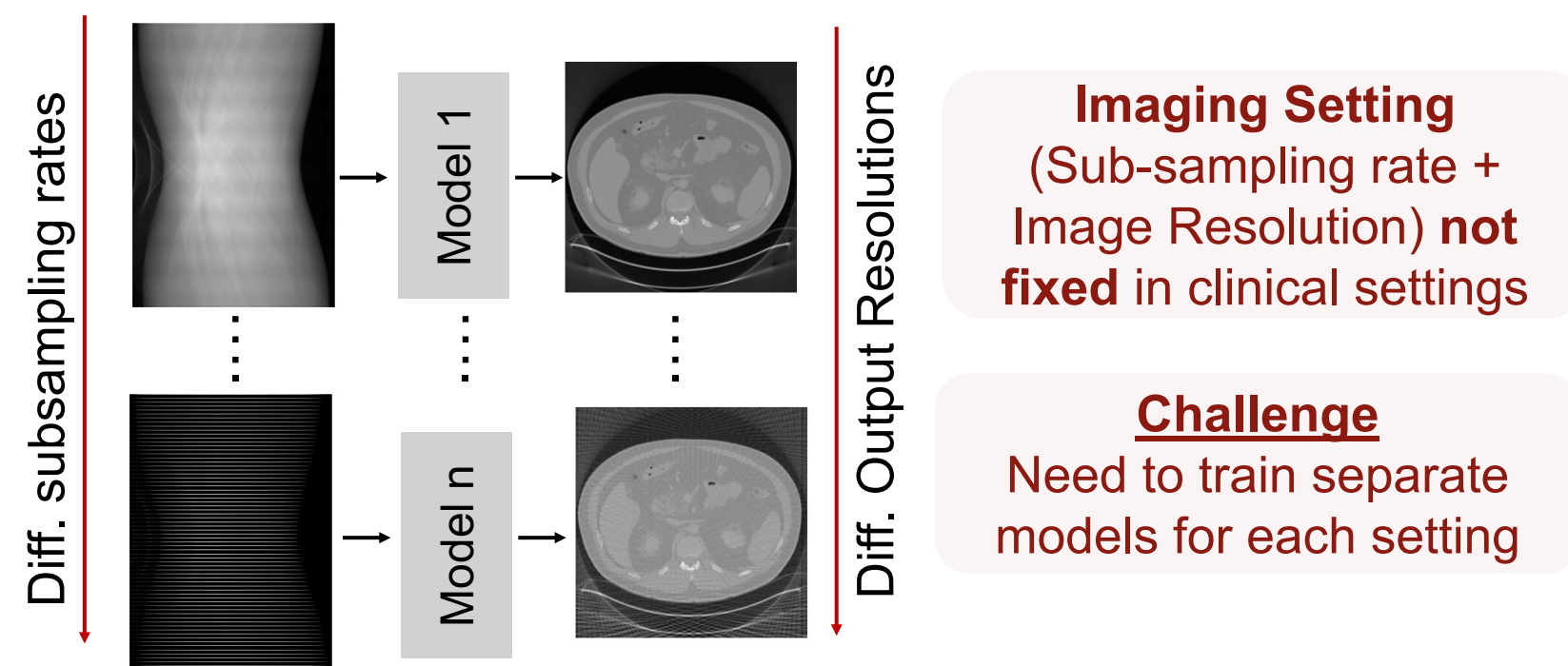
Task: CT Reconstruction



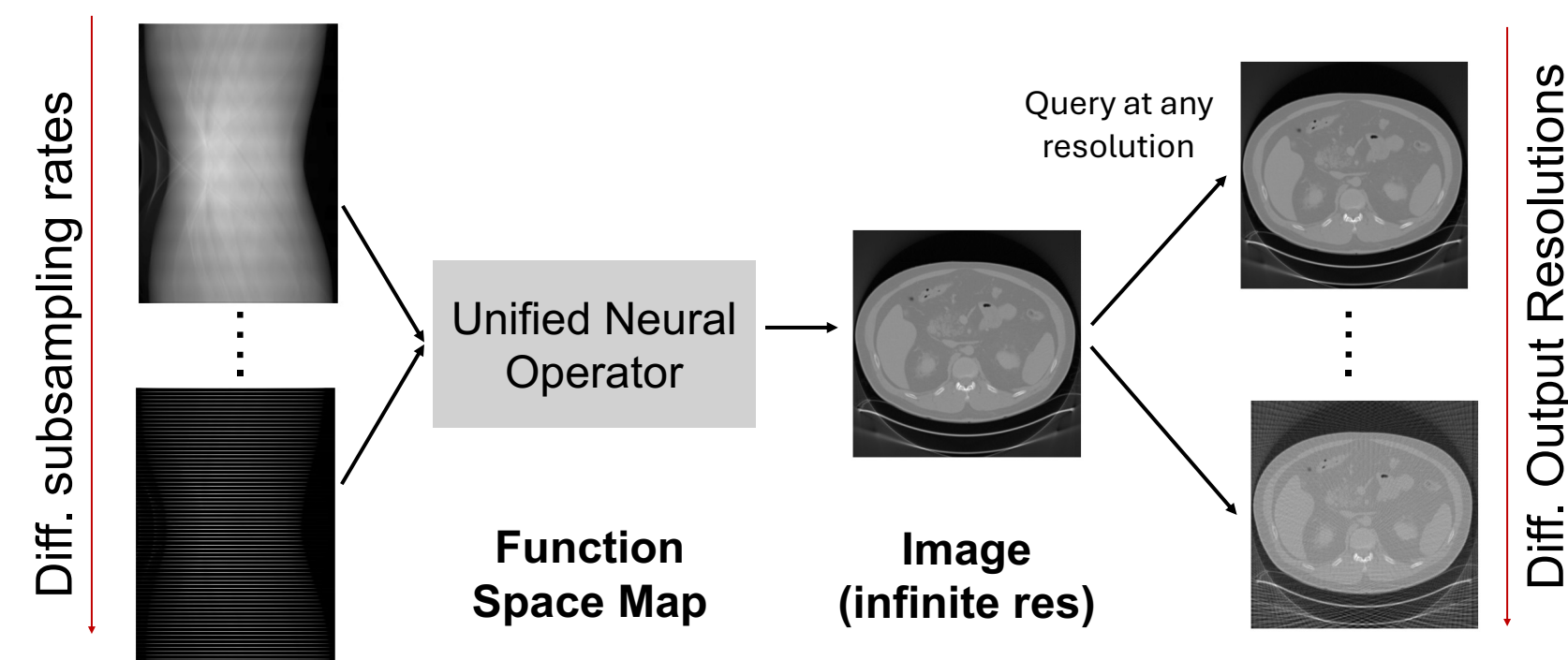
Neural Network Overfit to Single Setting

Method + Training Rate	Test Setting (PSNR in dB)		
	18-view	36-view	72-view
LEARN (72-view)	4.16	22.40	32.32
RegFormer (72-view)	5.04	24.63	35.11

Existing Deep Learning Models: Discrete Space Map

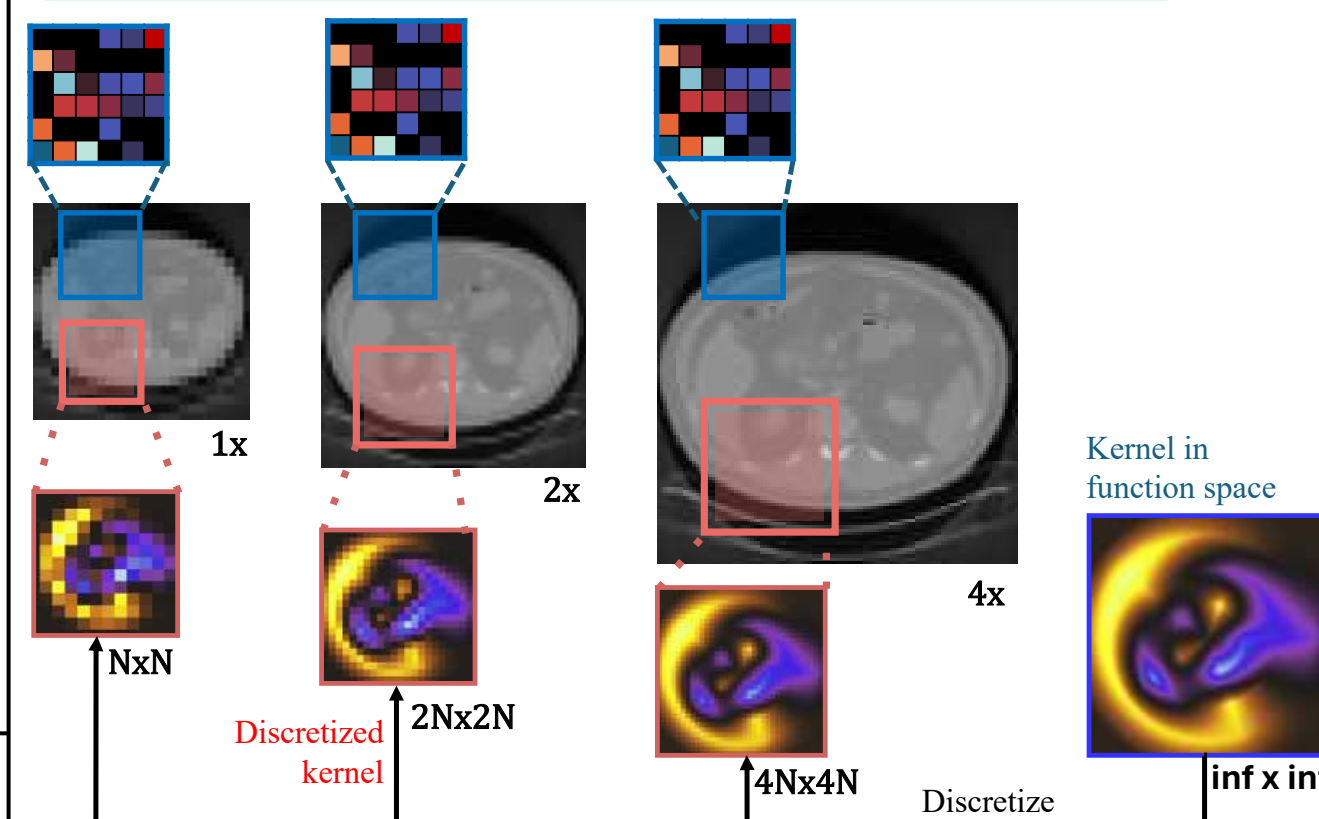


Our Solution: Learn in Function Space



Method: Neural Operators

CNN: Fixed Kernel size requires retraining for new resolutions

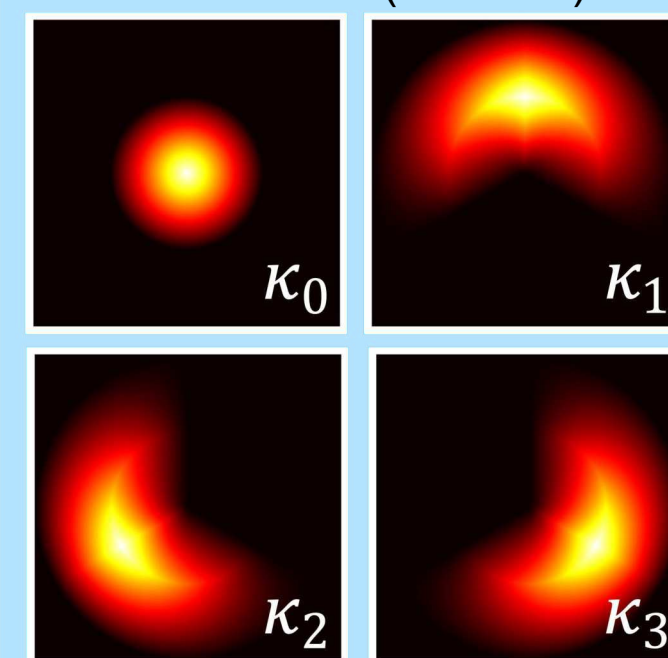


Neural operator: learn kernels at infinite resolution which can be discretized at any size. Learn once, infer at any resolution

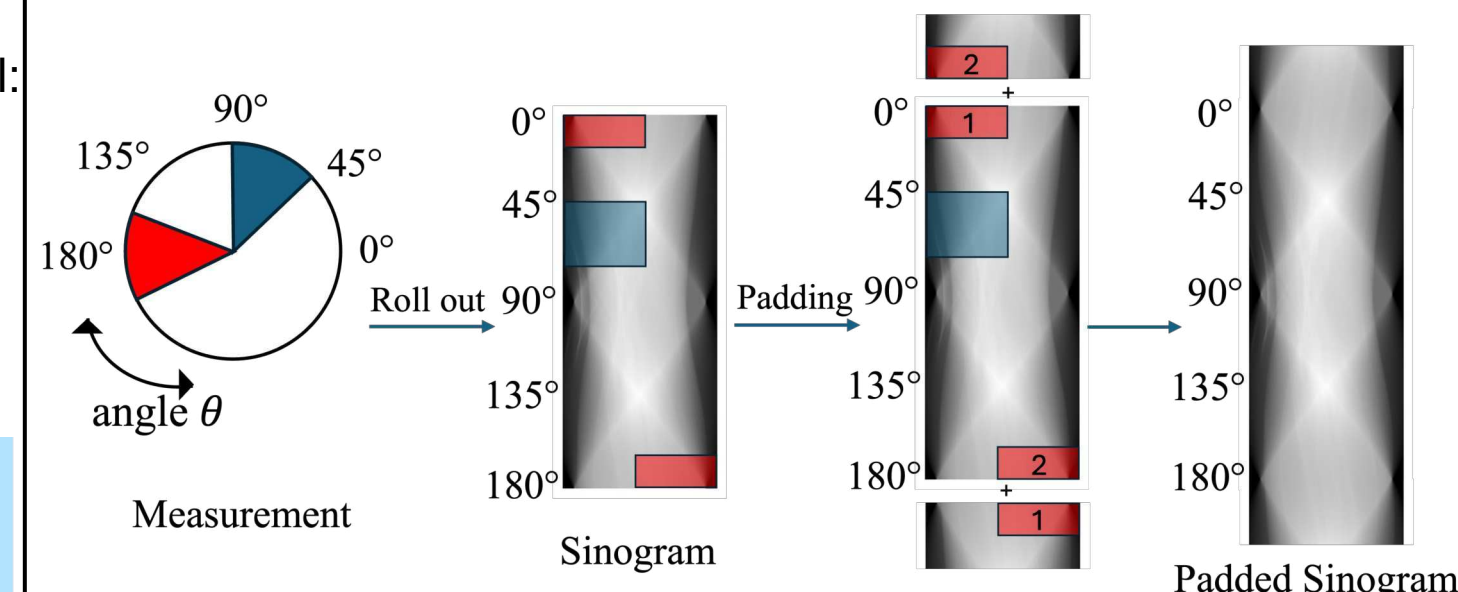
Learning an infinite-resolution kernel:

$$\kappa = \sum_{\ell=1}^L \theta^{\ell} \cdot \kappa^{\ell}$$

Basis functions: Continuous (first four)



Rotational Equivariant Learning

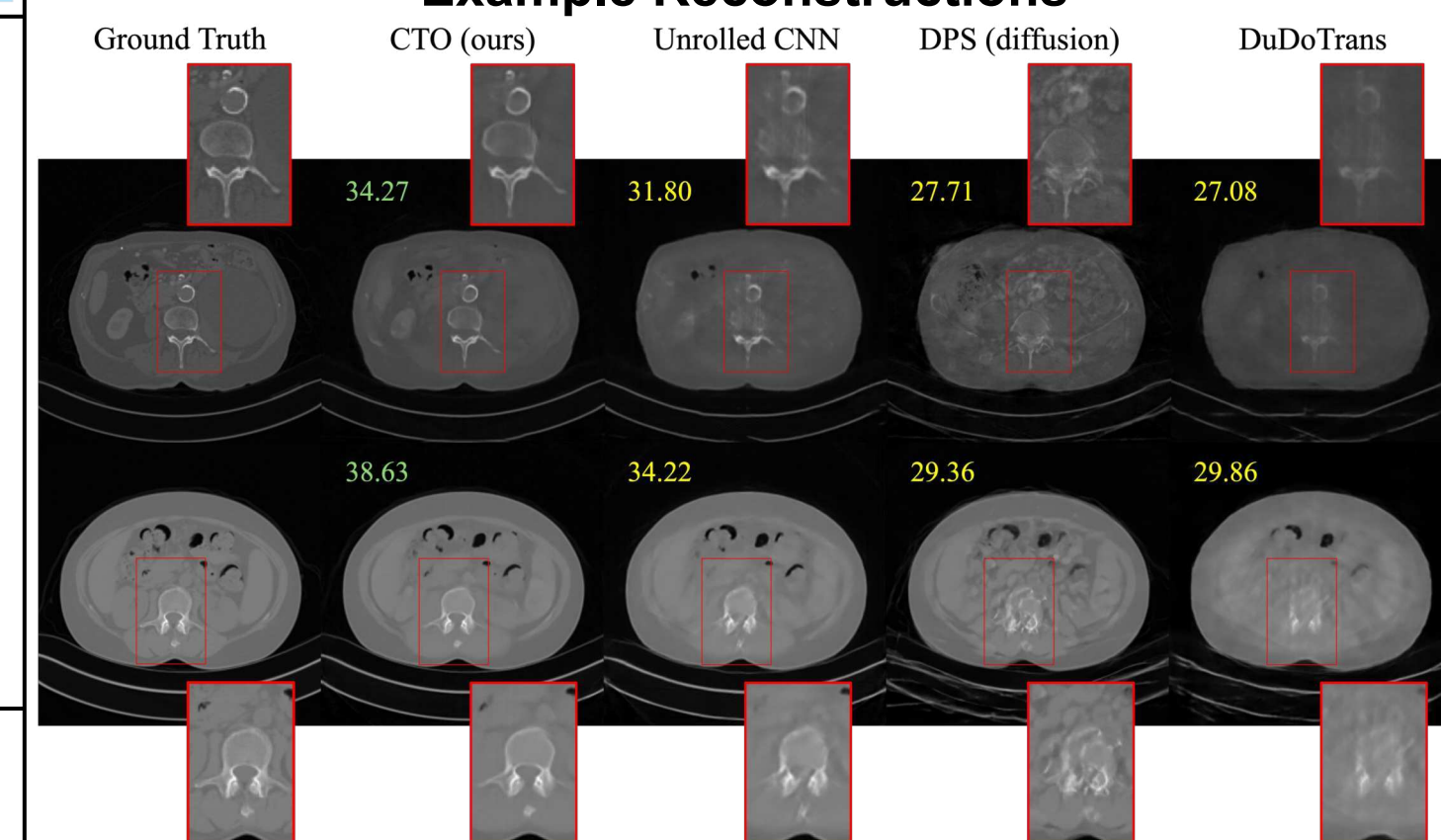


Results

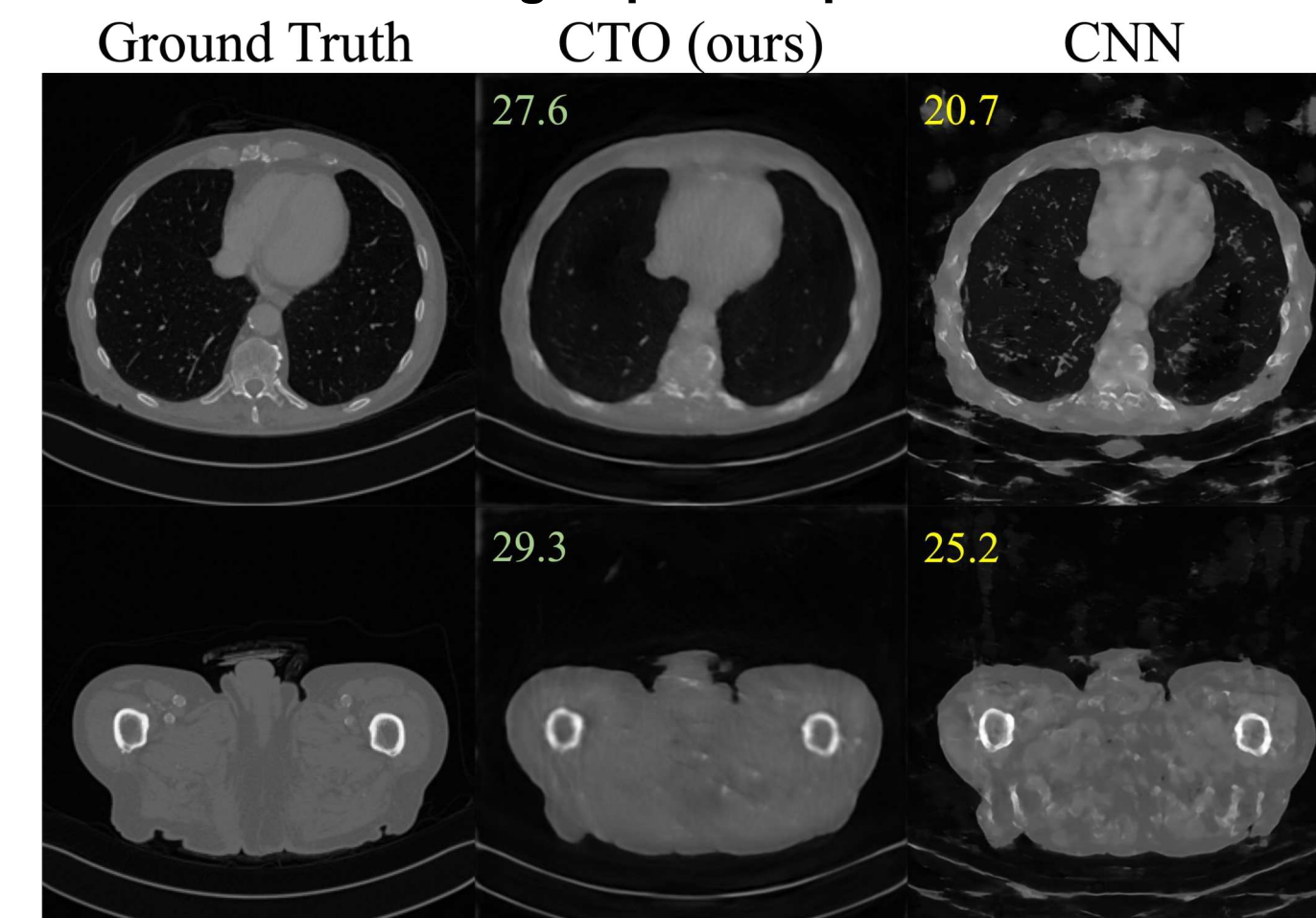
CTO outperforms all baseline methods

Method	Testing Rate (AAPM Dataset, PSNR in dB)		
	18-view	36-view	72-view
SART	24.97	25.91	26.66
DPS	25.78	28.33	30.56
Unrolled CNN	29.14	31.76	33.35
CTO	31.57	35.06	37.88

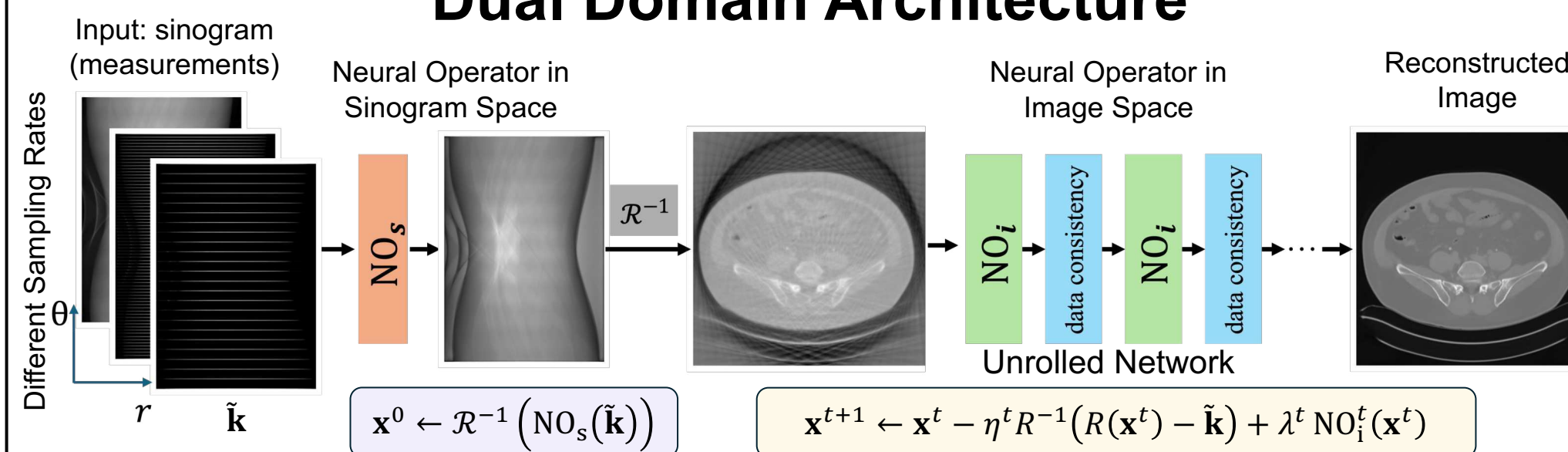
Example Reconstructions



Zero-shot Image Space Super Resolution



Dual Domain Architecture



Inside $\mathbf{NO}_s$: Frequency and Spatial Branches

