

Figure 1: Navier-Stokes Benchmark (See SM C.5 for detailed description). Validation error (Y-Axis) for all the CNO and FNO models we have tested (details in SM C.2) with respect to model size (X-axis, left) and per-epoch training time (X-axis, right).

	FFNN	UNet	DeepONet	FNO	CNO
Darcy Flow	2.13%	0.54%	1.13%	1.01%	0.44%

Table 1: Darcy Flow Benchmark. Relative median L^1 test errors. The experiment is based on the example from Li, et al. "Fourier neural operator for parametric partial differential equations". The data itself is trained and tested at 64^2 resolution.

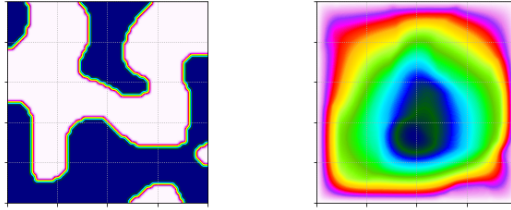


Figure 2: Solution operator for Darcy Flow from Li et. al. Illustration of Left: Input (permeability coefficient) and Right: Output (Fluid Pressure) .

	In/Out	ResNet	FFNN	UNet	DeepONet	FNO	CNO
Smooth Transport	In	0.39%	7.09%	0.49%	1.14%	0.40%	0.30%
	Out	0.96%	650.57%	1.28%	157.22%	13.83%	0.45%
Allen-Cahn	In	1.39%	18.27%	0.82%	13.63%	0.57%	0.83%
	Out	3.74%	46.93%	2.18%	19.86%	2.36%	3.67%
Navier-Stokes	In	3.68%	8.05%	3.54%	11.64%	3.93%	3.01%
	Out	9.67%	16.12%	10.93%	15.05%	13.45%	7.06%
Compressible Euler	In	1.70%	0.78%	0.38%	1.93%	0.47%	0.35%
	Out	2.06%	1.34%	0.76%	2.88%	0.85%	0.62%

Table 2: Relative median L^1 test errors, for both in- and out-of-distribution testing, for different benchmarks and models, including the newly obtained ResNet results. We used the fully convolutional ResNet architecture from CycleGAN repository, where we choose the number of residual blocks with cross-validation. CycleGAN repository can be found here <https://github.com/junyanz/pytorch-CycleGAN-and-pix2pix/tree/9f8f61e5a375c2e01c5187d093ce9c2409f409b0>