PBC (both) MPS Classifier,  $\chi_{max}=2$ ,  $\eta=0.05$ , 40 Sweeps, Fourier Encoding, Averaged Over 25 MPS Initialisations Mean Training Accuracy ± 1 SD 0.95 Mean Testing Accuracy ± 1 SD 0.90 Accuracy 0.85 0.80 0.75  $-\pi/2$  $\pi/2$ -π Phase (radians)