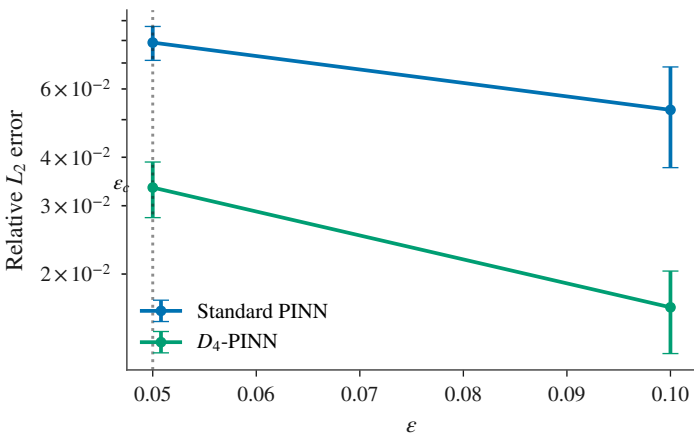
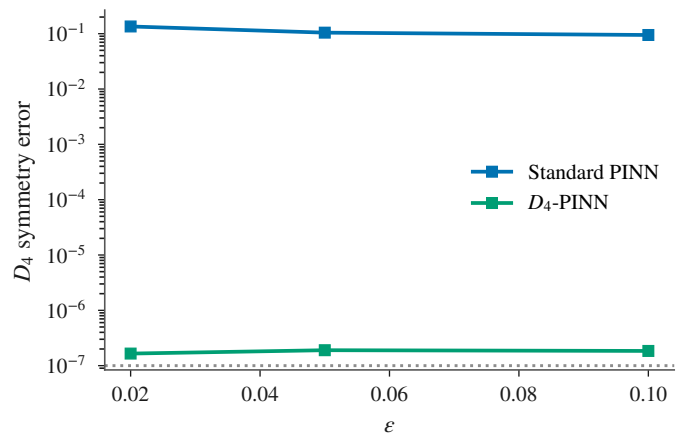


$$\text{Allen--Cahn equation: } \varepsilon^2 \Delta u + u - u^3 = 0$$

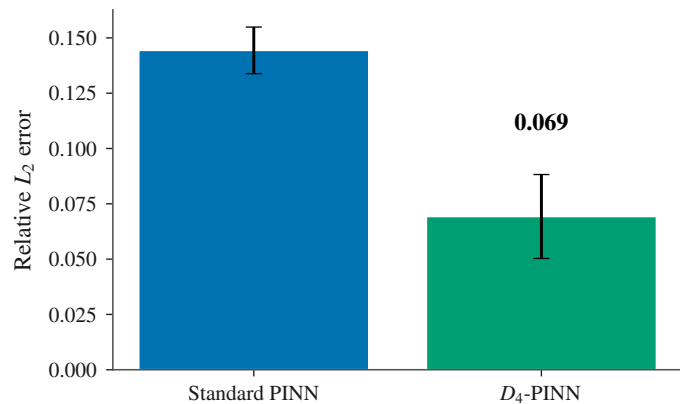
(a)  $L_2$  error vs.  $\varepsilon$



(b) Symmetry deviation vs.  $\varepsilon$



(c)  $\varepsilon = 0.02$ : symmetry-breaking regime



(d) Computational cost

