Complementary cumulative distributions QNGOptimizer AdamOptimizer  $\beta_1$ =0.9,  $\beta_2$ =0.99,  $\varepsilon$ =10<sup>-8</sup> approx='block-diag',  $\lambda$ =0.5  $\eta = 0.025$ = n = 0.35--- n=0.8Probability of occurrence  $-\eta = 0.45$  $\eta = 0.9$ 0.8 ---  $\eta$ =0.55  $\eta = 0.2$  $\eta = 0.25$  $\eta = 0.3$ 0.6  $\eta = 0.45$ n = 0.50.4  $\eta = 0.55$  $\eta = 0.65$  $\eta = 1.45$  $\eta = 0.7$ 0.2 (b) (a) 0.0 MomentumQNGOptimizer MomentumOptimizer  $\rho$ =0.9, approx='block-diag',  $\lambda$ =0.5  $\rho = 0.9$ 1.0  $\eta = 0.02$ Probability of occurrence 0.8  $\eta = 0.15$  $\eta = 0.06$ 0.6 0.4 0.2 (d) (c) 0.0 50 100 150 200 0 50 100 150 200 steps steps