Cumulative distributions AdamOptimizer QNGOptimizer  $\beta_1$ =0.9,  $\beta_2$ =0.99,  $\varepsilon$ =10<sup>-8</sup> approx='block-diag',  $\lambda$ =0.5 1.0 Probability of occurrence n = 0.85 $-\eta = 0.05$  $\eta = 1.35$  $\eta = 0.1$  $---- \eta = 1.4$ 0.8  $\eta = 0.15$ n=0.15---- η=1.45 ---  $\eta = 1.5$  $\eta = 0.25$  $\eta = 1.05$ η=0.25  $\eta = 1.55$ 0.6 --- n=1.6η=1.65  $-\eta = 1.75$ 0.4 -n=1.95 $-\eta = 0.7$ \_\_\_η=2  $\eta = 0.75$ h=2.1 $-\eta = 0.8$  $-\eta = 2.2$ -n=0.85 $\eta = 0.9$ ---- n=2.4 $\eta = 0.95$  $\eta = 1$  $---- \eta = 2.6$  $-\eta = 2.8$  $-\eta = 1.2$  $\eta = 1.25$ MomentumQNGOptimizer  $\rho$ =0.9, approx='block-diag',  $\lambda$ =0.5 MomentumOptimizer  $\rho = 0.9$ 1.0 Probability of occurrence  $-\eta = 0.7$  $-\eta = 0.1$  $\eta = 0.9$ 0.8  $\eta = 0.75$ -n=0.95 $-\eta=1$ 0.6  $-\eta = 1.1$  $\eta = 1.15$  $\eta = 1.2$ n = 1.10.2  $-- \eta = 0.7$ (c) - n = 0.750.0 0.2 0.2 0.0 0.4 0.6 0.8 0.0 0.4 0.6 0.8 1.0 1.0 delta energy delta energy