1 Hamiltonian Monte Carlo, code tests

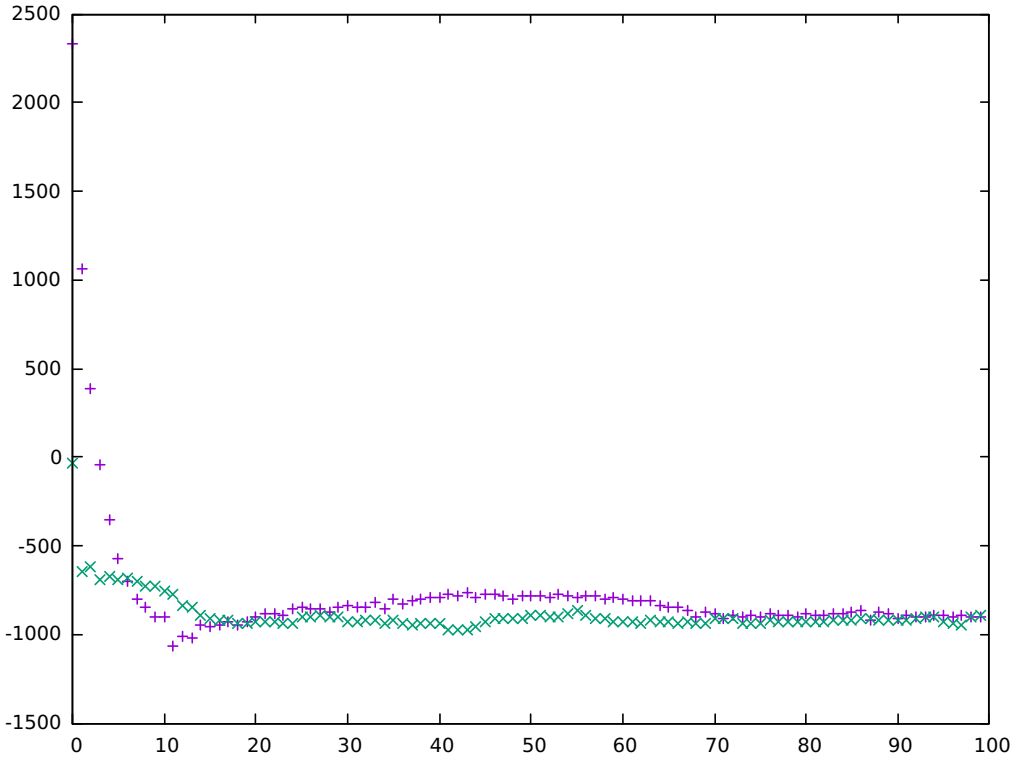

Figure 1: Action $\mathrm{Tr}\, D^4 + g\, \mathrm{Tr}\, D^2$ vs Monte Carlo time; $(p, q) = (1, 1)$; $n = 20$; $g = -2.5$; $L = 100$; $\tau_{\mathrm{cold10}} = 0.0001$; $\tau_{\mathrm{cold90}} = 0.0005$; $\tau_{\mathrm{hot}} = 0.001$; time: 5s.

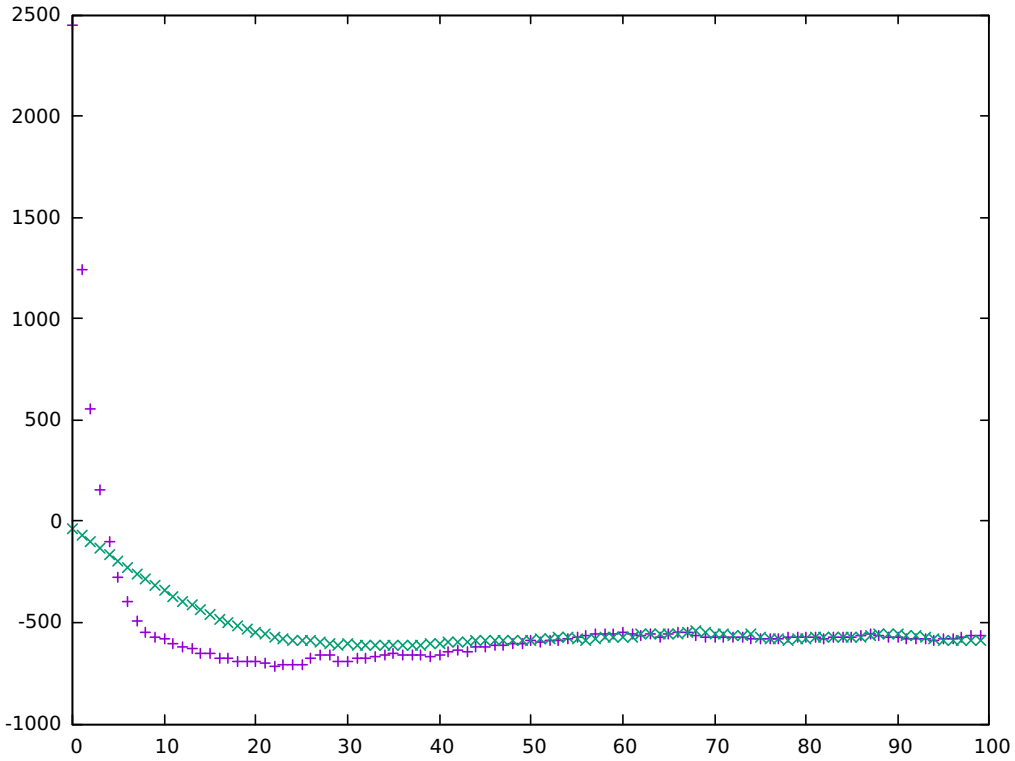

Figure 2: Action $\operatorname{Tr} D^4 + g \operatorname{Tr} D^2$ vs Monte Carlo time; $(p, q) = (0, 3)$; $n = 20$; $g = -2.5$; $L = 100$; $\tau = 0.0001$; time: 36s.

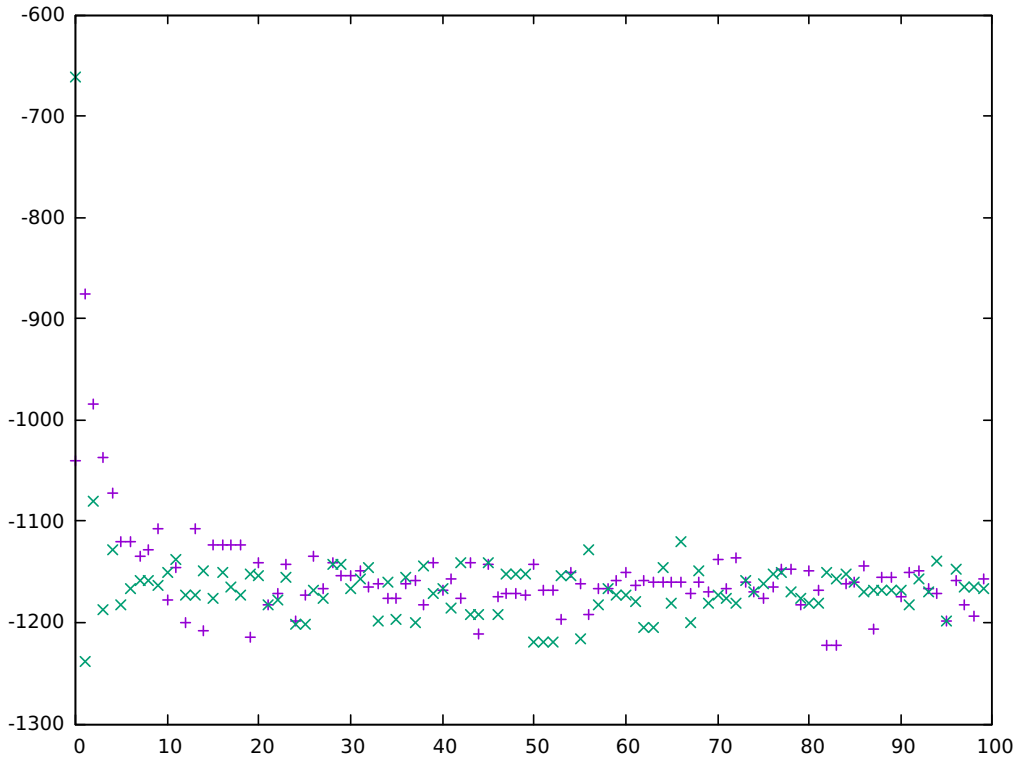

Figure 3: Action $\operatorname{Tr} D^4 + g \operatorname{Tr} D^2$ vs Monte Carlo time; $(p, q) = (1, 3)$; $n = 20$; $g = -2.5$; $L = 100$; $\tau_{\text{cold10}} = 0.001$; $\tau_{\text{cold90}} = 0.0005$; $\tau_{\text{hot}} = 0.0005$; time: 5m 40s.

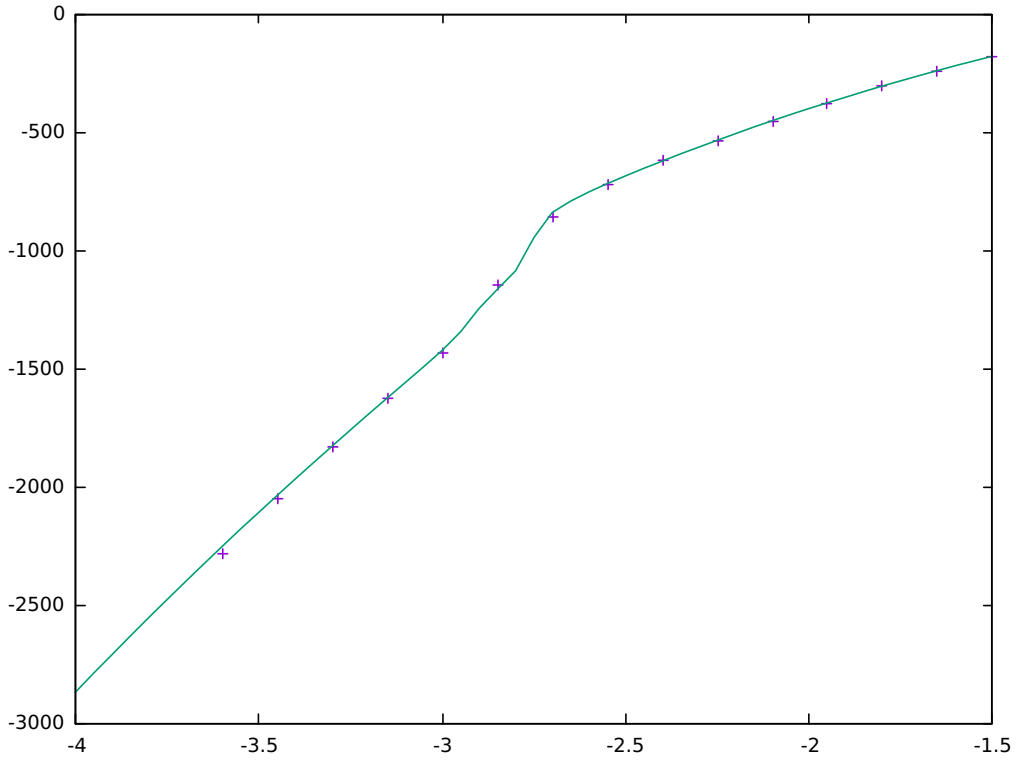

Figure 4: Action Tr $D^4 + g$ Tr D^2 vs g; Metropolis (Green) and HMC (purple); $(p, q) = (2, 0)$; $n = 20$; $L = 100$; $\tau = 0.0001$; time 13m 20s