Benchmark of 2D-Ising with various style and compile option

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1 Benchmark

1.1 time

Table 1: elapsed time (second) for each program in Ising2d with N=51x50, nkbt=50, $\text{relx}_{\text{mcs}} = 500000$, $\text{sample}_{\text{mcs}} = 500000$.

compile options	(None)	-DDEBUG -g ... (Debug)	-O3 -DNDEBUG(Release)
f77 style	2112.462	2097.460	1239.295
f77 with function	2332.756	2280.915	1224.675
f90 with type	4946.556	8243.244	1579.746

2 Results

2.1 Ising2d$_{\text{equilibriumbuiltinrandf77.out}}$

2.1.1 result

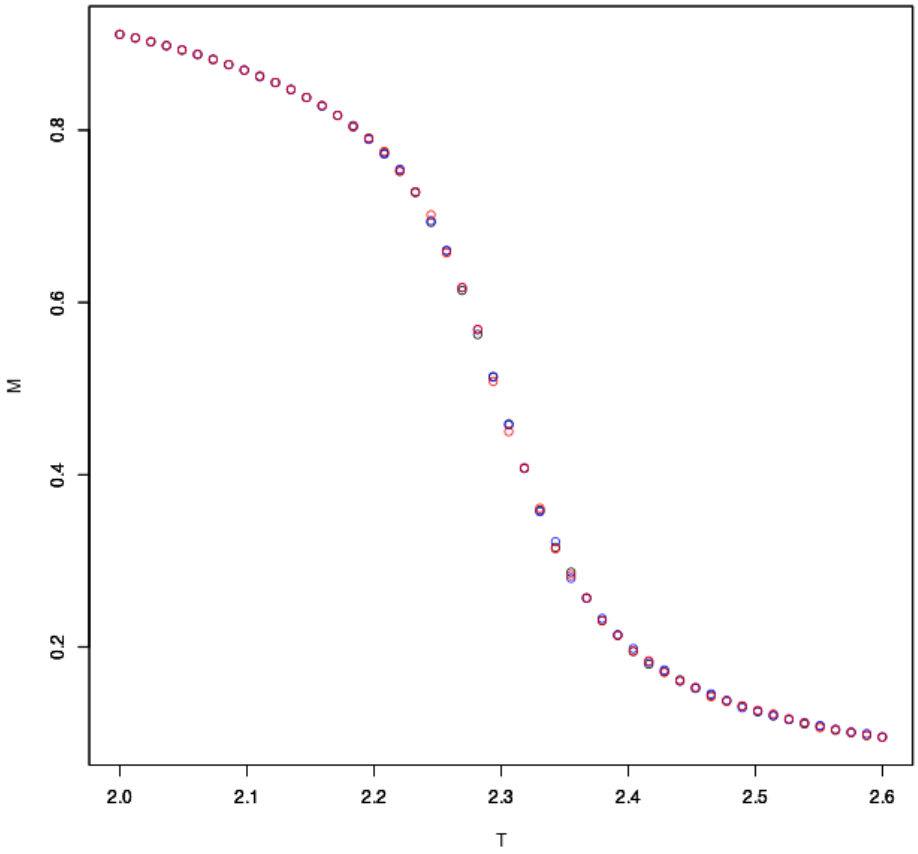

Figure 1: Result of the f77 style for equilibrium Monte Carlo simulation

2.2 Ising2d$_{\text{equilibriumbuiltinrandf77withfunc.out}}$

2.2.1 result

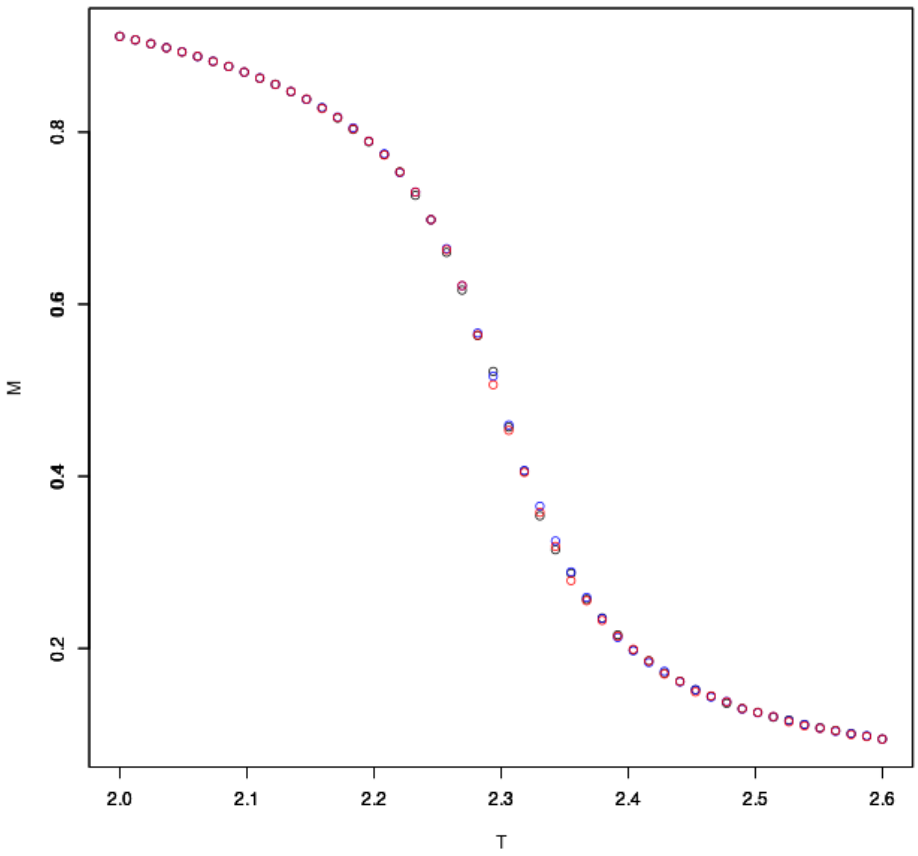

Figure 2: Result of the f77 style with function for equilibrium Monte Carlo simulation

2.3 Ising2d$_{\text{equilibriumbuiltinrand.out}}$

2.3.1 result

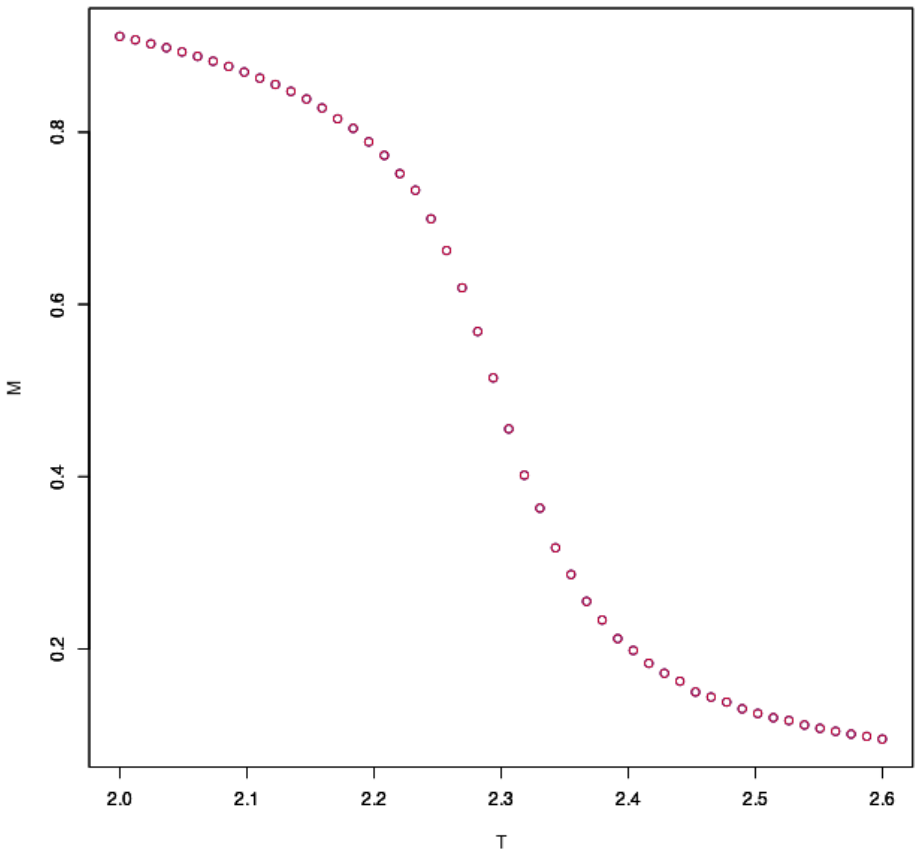

Figure 3: Result of the f90 style with class for equilibrium Monte Carlo simulation

3 Compare

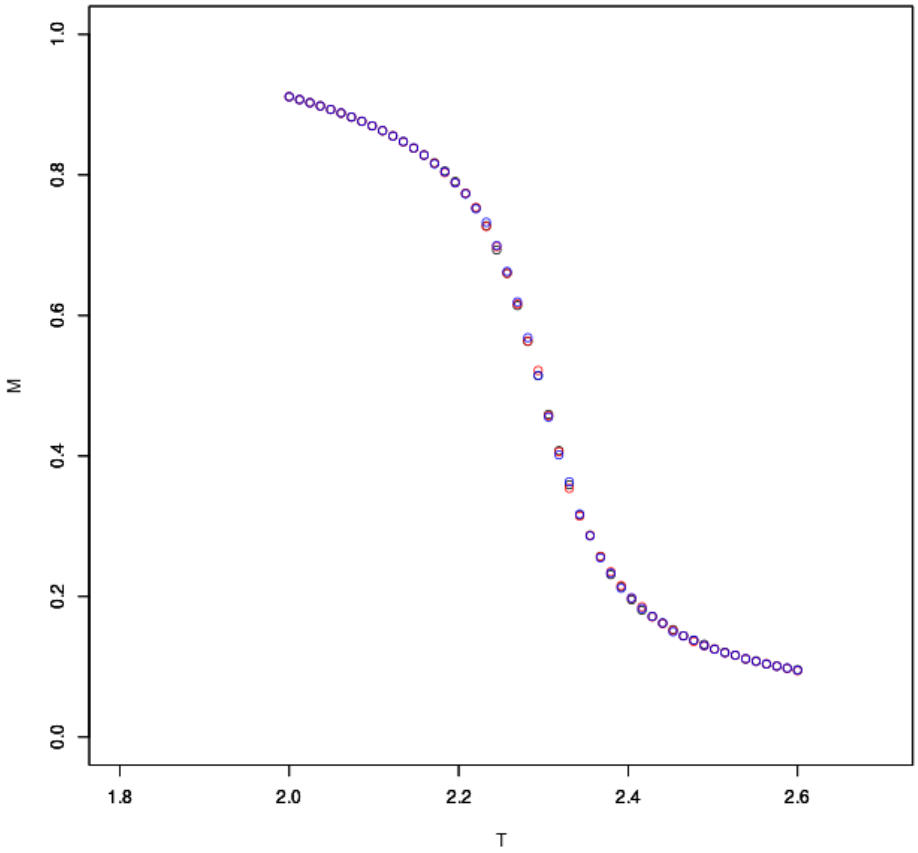

Figure 4: Comparison of the magnetizations for equilibrium Monte Carlo simulation

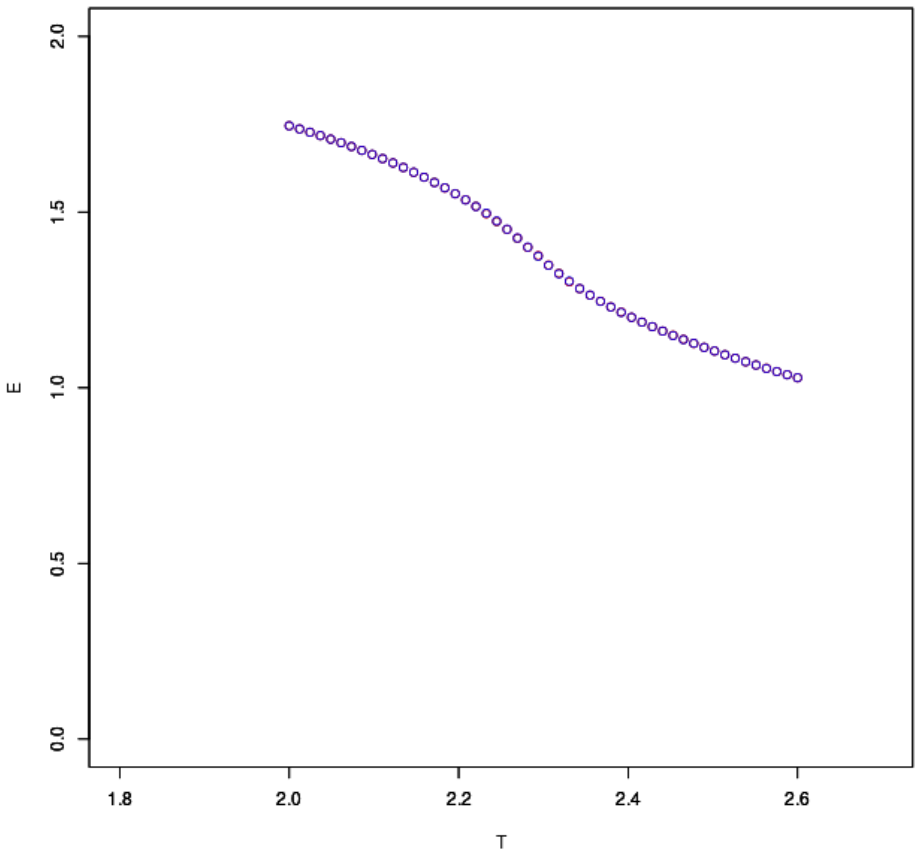

Figure 5: Comparison of the energies for equilibrium Monte Carlo simulation