

```

iter_sum0,k = 0;    # for (0,0) and (2π/L,0)
normalization_factor = 0;
for every lattice size L do
  for every disorder e do
    initialize interaction configuration;
    initialize spin configuration;
    for warm up period do
      update lattice;
    end
    for sample period do
      update lattice;
      iter_sum += magnetic susceptibility for current spin config;
      normalization_factor += 1;
    end
  end
end
end
ζ calculation from iter_sums;

```

Basically only changed expectation value estimator to: $\frac{1}{norm_fac} \sum_{u,e} \hat{\chi}_{u,e} \rightarrow \langle \hat{\chi} \rangle = \sum_e Pr(e) \sum_s \frac{e^{-\beta H_e(s)}}{Z_e} \hat{\chi}(s)$

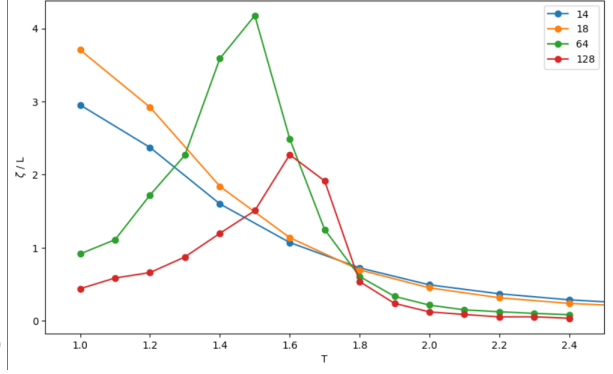
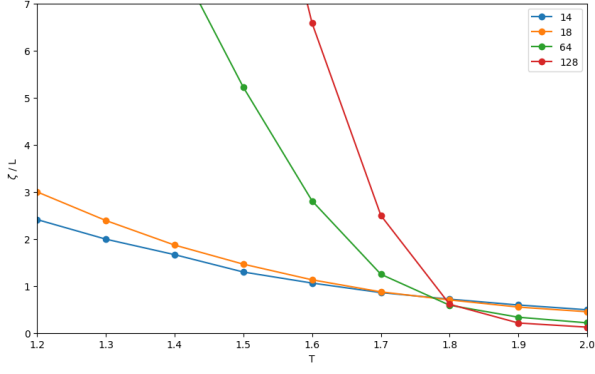


Figure 1: $p = 6\%$ plain mean, $up = 1$, $ne = 1000$, $ni = 1000$, $nw = 10000$ Figure 2: $p = 6\%$ included Boltzmann factor, $up = 0$, $ne = 1000$, $ni = 1000$, $nw = 50000(200000)$

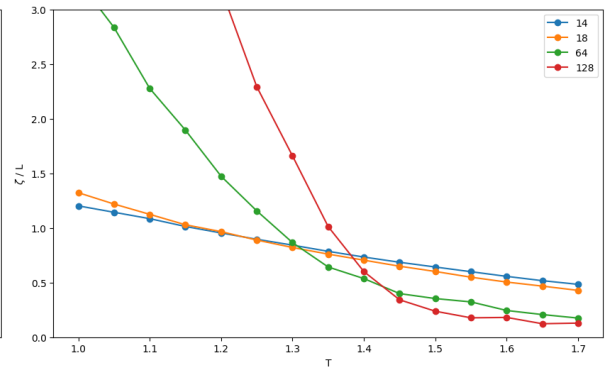
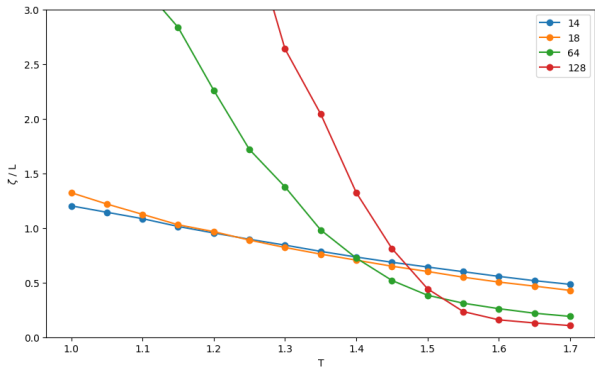


Figure 3: $p = 10.0\%$ plain mean, $up = 1$, $ne = 1000$, $ni = 5000$, $nw = 5000$ Figure 4: $p = 10.0\%$ plain mean, $up = 1$, $ne = 1000$, $ni = 1000$, $nw = 50000$