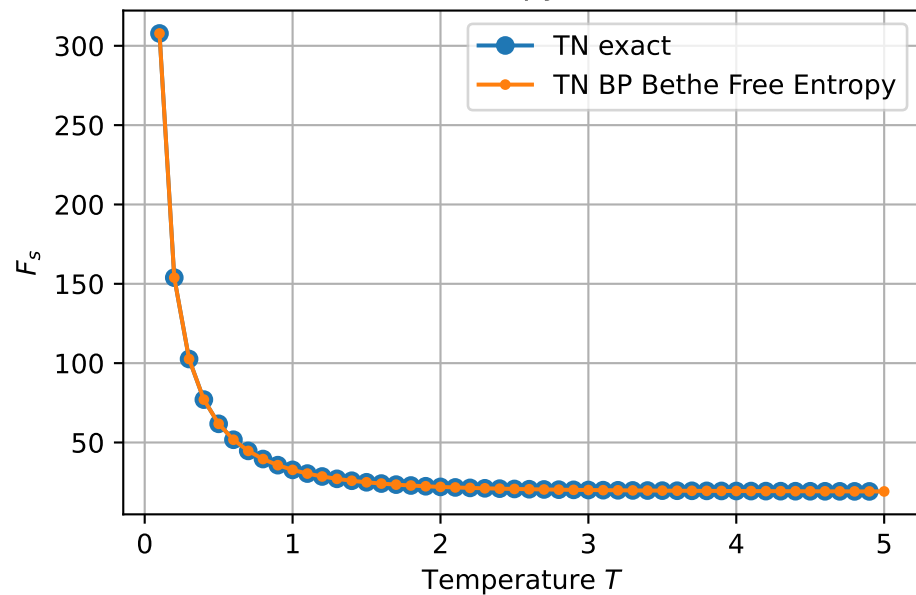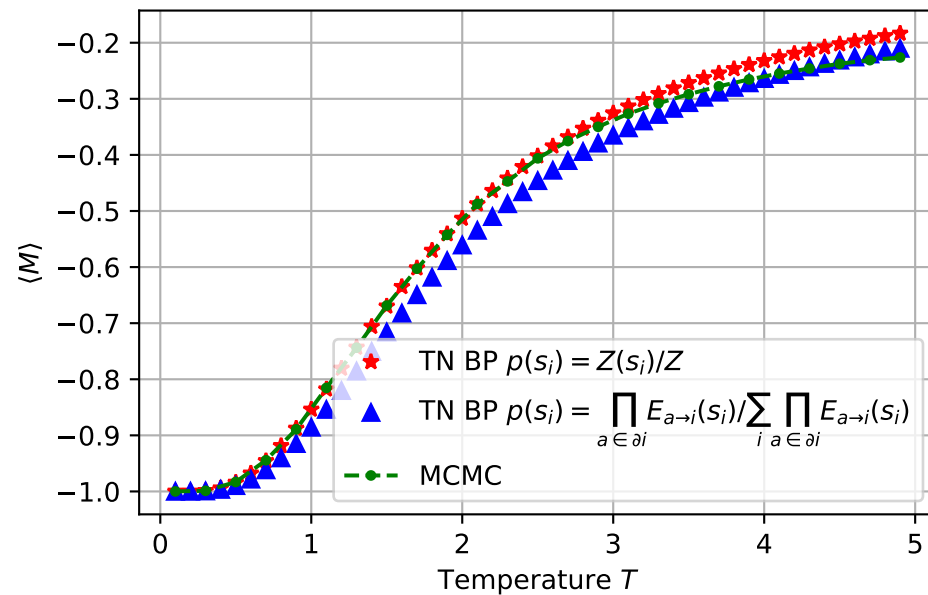$L = 2$, 3x3x3 3D OBC LJ Model (Cutoff $\Lambda = 3.0$, Lattice Constant $\alpha = 1.0$.)

Free Entropy F_s vs. T

- TN exact
- TN BP Bethe Free Entropy

Total magnetization $\langle M \rangle$ vs. T

- TN BP $p(s_i) = Z(s_i)/Z$
- TN BP $p(s_i) = \prod_{a \in \partial i} E_{a \to i}(s_i) / \sum_i \prod_{a \in \partial i} E_{a \to i}(s_i)$
- MCMC

$\langle E \rangle = -\partial_\beta F_s$ vs. T

- TN exact
- TN BP
- MCMC