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Computational Physics – Exercise 7

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1 Coding the Swendsen-Wang Algorithm

We coded the Swendsen-Wang Algorithm, it can be found at [\[1\]](#).

2 Computing observables

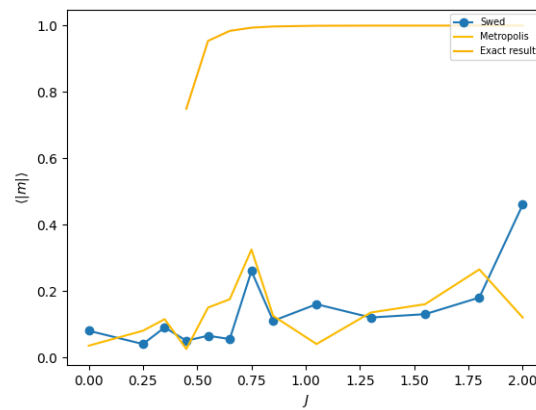


Figure 1: A plot of $\langle |m| \rangle$ vs J for the exact solution and different algorithms

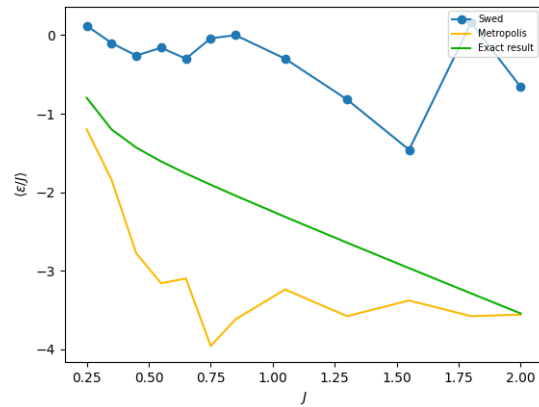


Figure 2: A plot of $\langle \epsilon/J \rangle$ vs J for the exact solution and different algorithms

3 The Monte Carlo history of m

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4 Calculating the autocorrelation time

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5 Comparing dynamical exponents

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References

- [1] P. Anancia Devaneyan and R. K. Senthilkumar. Exercises for the Physics 760: Computational Physics course during the WS 22/23 Term.