Computational Manybody Physics
Problem Set #2

Use stochastic series expansion method to study the XXZ model in two dimension. [1]

$$H = J_1 \sum_{\langle ij \rangle} \mathbf{S}_i \cdot \mathbf{S}_j,$$

Compute the energy per site E/N, specific heat C_v/N, staggered magnetization $\langle m_s^2 \rangle$, and susceptibility $\chi(0,0)$ for $L = 6, 8, 10$.[2]

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[1] See Prof. Anders Sandvik's website for a F90 sample code.
[2] See Chapter 5 of A. W. Sandvik, AIP Conf. Proc. 1297, 135 (2010) for the definitions of the estimators.