

Aging phenomena in magnetic systems

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Content

- 1 Introduction to aging phenomena
- 2 Phenomenology of aging
- 3 Aging in coarsening systems

Defining characteristics and symmetry properties of **aging**:

- slow dynamics (i.e. non-exponential relaxation)
- breaking of time-translation invariance
- dynamical scaling

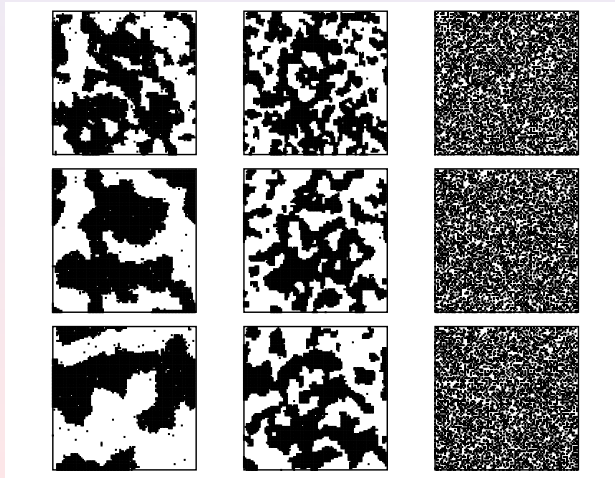
Today:

general results for phenomenological scaling behaviour

perfect magnets

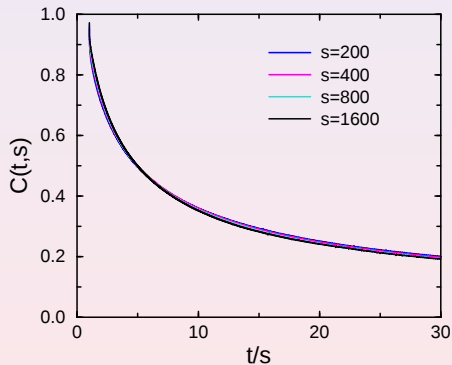
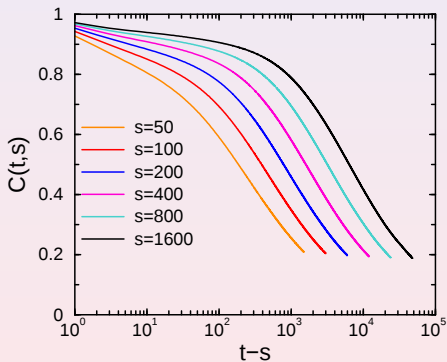
disordered magnets

spin glasses

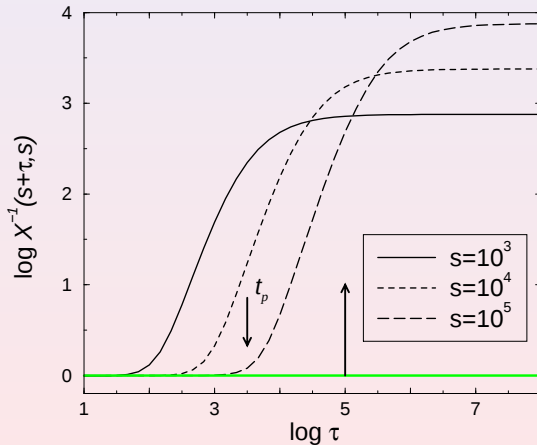


quench from high to low temperatures

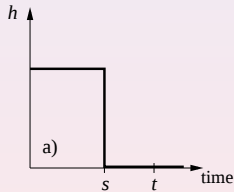
aging in the $d = 2$ Ising model quenched below T_c



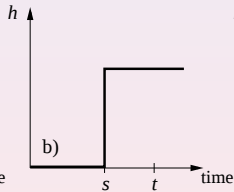
fluctuation-dissipation ratio in the **spherical model**



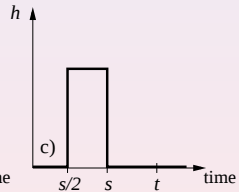
protocols for integrated responses



thermoremanent

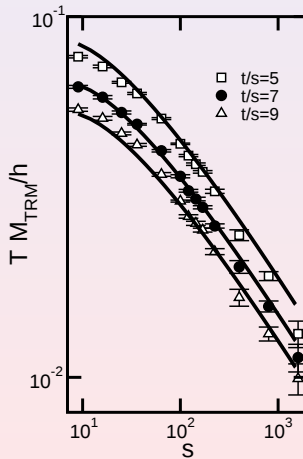


zero-field cooled

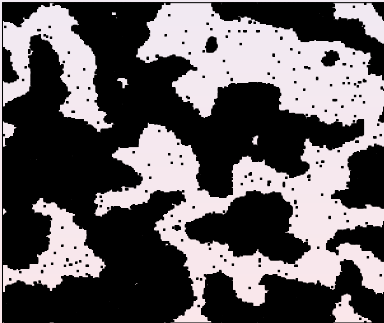


intermediate

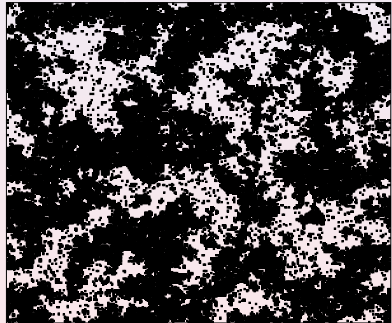
scaling of the thermoremanent magnetization in the 2D Ising model



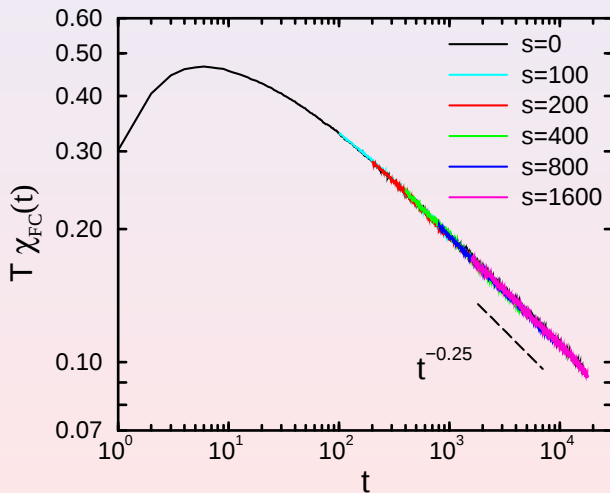
phase ordering



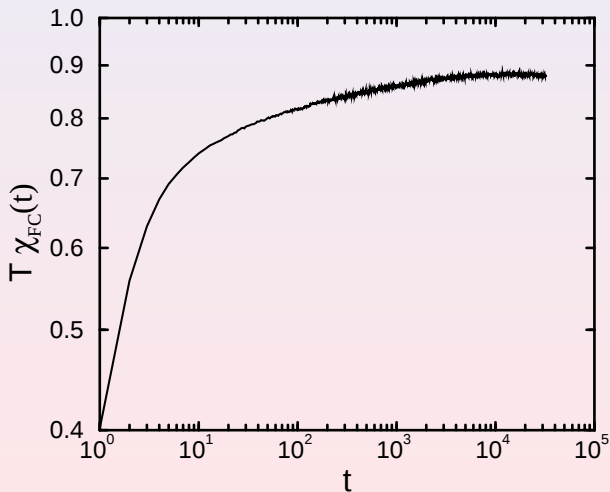
critical dynamics



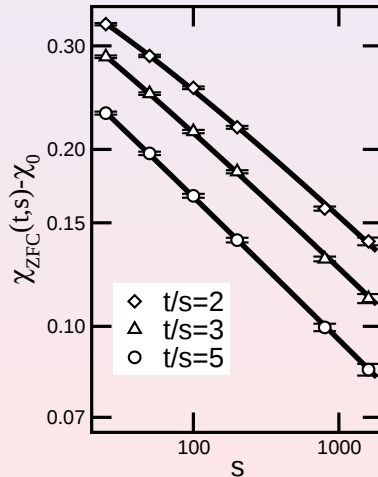
field cooled susceptibility in the 2D Ising model



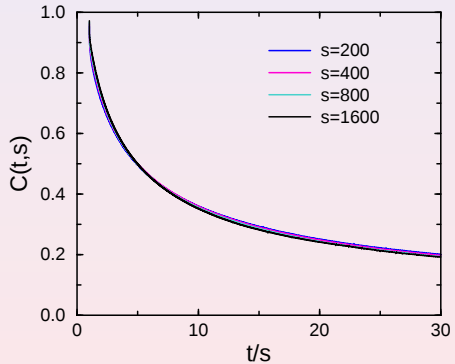
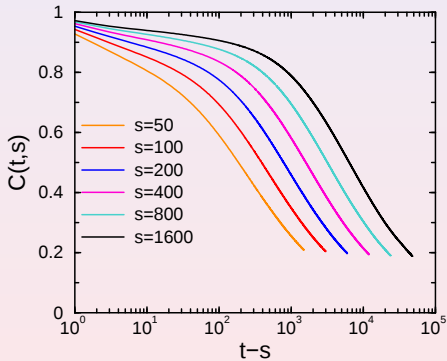
field cooled susceptibility in the critical 2D Ising model

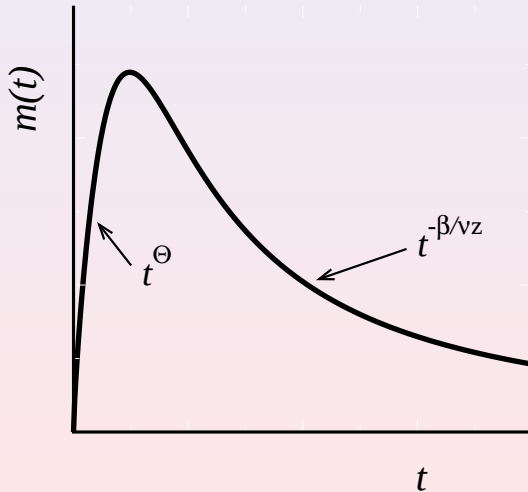


scaling of the zero-field cooled susceptibility in the 2D Ising model



aging in the $d = 2$ Ising model quenched below T_c





Monday, July 20, 10:45 am