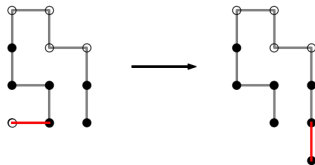# Globule-coil Transition in Models of Linear Magnetic Polymers

Kamilla Faizullina

knfayzullina@edu.hse.ru

National Research University
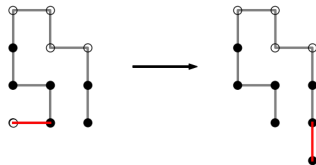Higher School of Economics (Moscow)

March 29, 2022

XY model on self-avoiding walks (SAWs)

- Magnetic polymer is a sequence of N monomers
- Conformation is a self-avoiding walk
- Each node represents a spin-like variable s_i associated with angle $\theta_i \in [-\pi; \pi]$

XY model on self-avoiding walks (SAWs)

- Hamiltonian in lack of an external field:

$$H(u, s) = -J \sum_{\langle i,j \rangle} cos(\theta_i - \theta_j)$$

- Partition function: