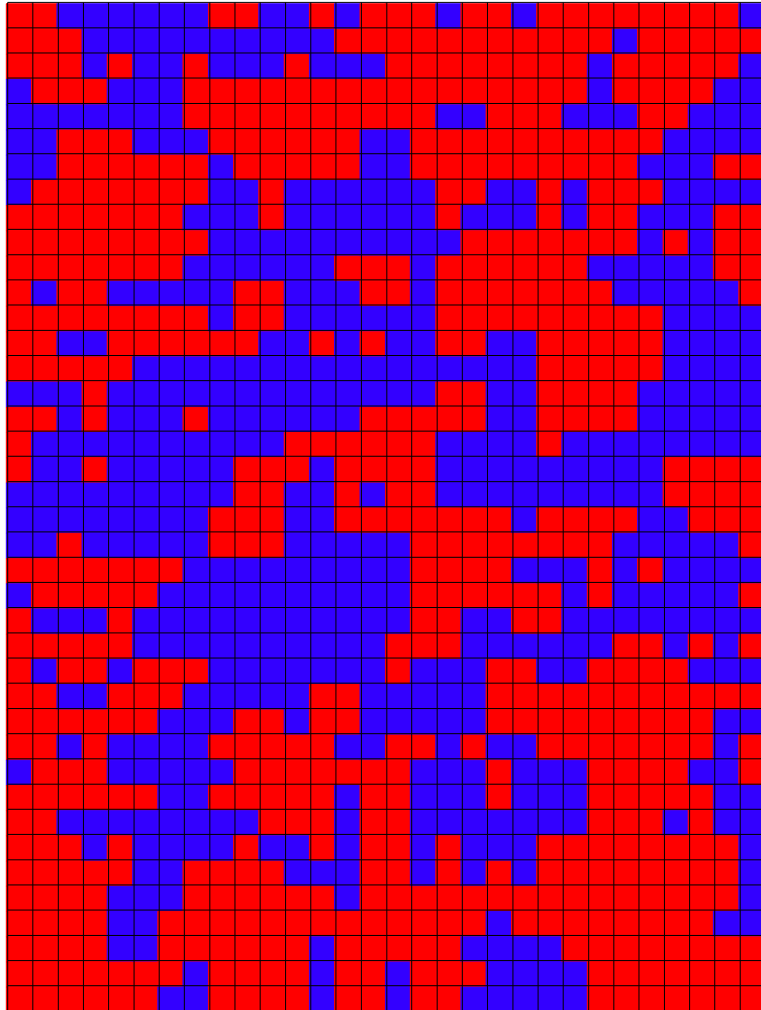


An example: 2D Ising model



Squares of two colors,
representing spins $s = \pm 1$

Nearby spins want to be the
same, parameter x :

$$\text{Prob} \propto x^{\#\{+-\text{neighbors}\}}$$

$$\propto \exp(-\beta \sum_{\text{neighbors}} s(u)s(v))$$

[Peierls 1936]:

there is a phase transition

[Kramers-Wannier 1941]:

$$\text{at } x_{crit} = 1/(1 + \sqrt{2})$$