Renormalization Group Flow

Inset A: Lattice Coarse-Graining

4×4 lattice

2×2 lattice
(b = 2)

RG
transform

Flow to
ordered phase

Legend:
- $\beta_{RG}(g)$
- Critical point $g_c \approx 1$
- Fixed point
- Ordered phase
- Disordered phase

Inset B: Microscopic → Macroscopic

- Theory: $\beta = 2(J/T)$
- Observed

$J/T = 2.1 \rightarrow \beta \approx 4.2$

UTAC Steepness β

Coupling Ratio J/T

Connection: $\beta_{UTAC} = \alpha\frac{J}{T}$ with $\alpha \approx 2$

$\beta_{RG}(g) = \frac{dg}{dl}$

Coupling constant $g = J/(k_B T)$