

SURFACE-DIRECTED SPINODAL
DECOMPOSITION
LATTICE MODEL VERSUS GINZBURG-LANDAU
THEORY

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Sanjay PURI, Harry L. FRISCH († 2007)

SPINODAL DECOMPOSITION

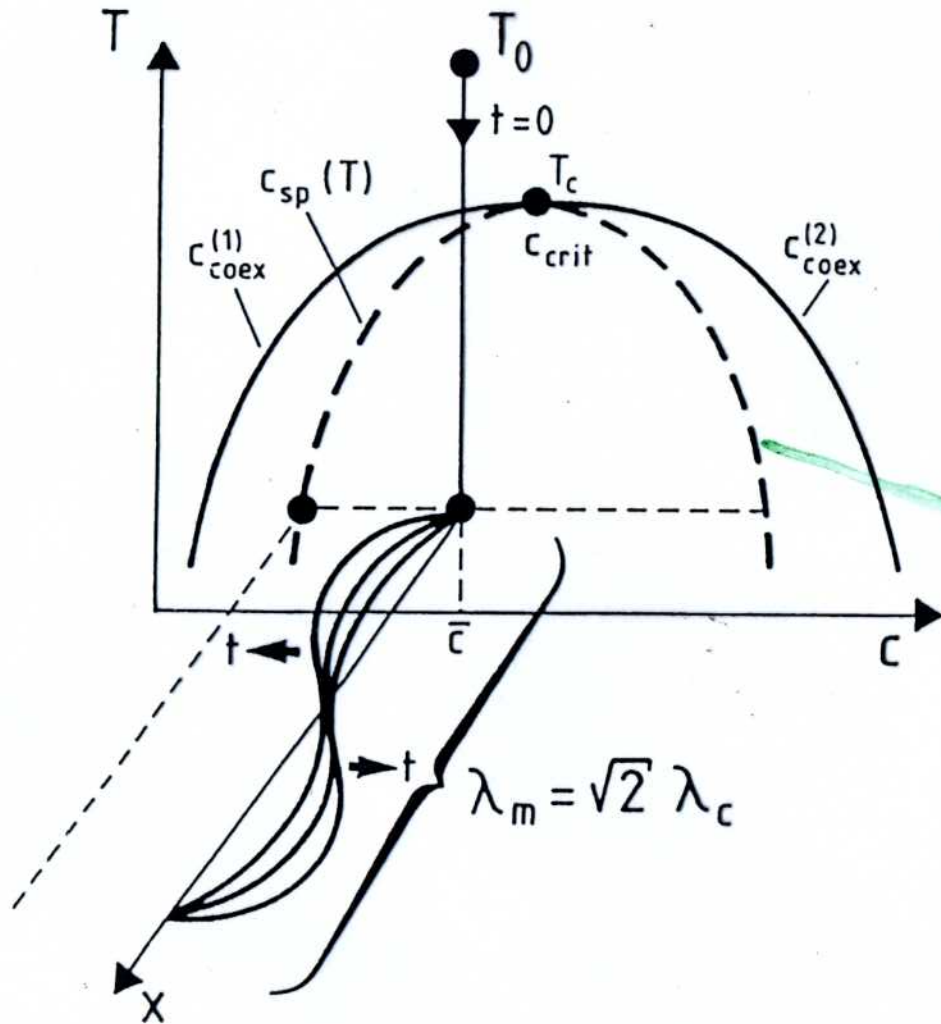
unstable binary mixture:
miscibility gap
quenching experiment

Cahn-Hilliard 1958

Cahn 1961

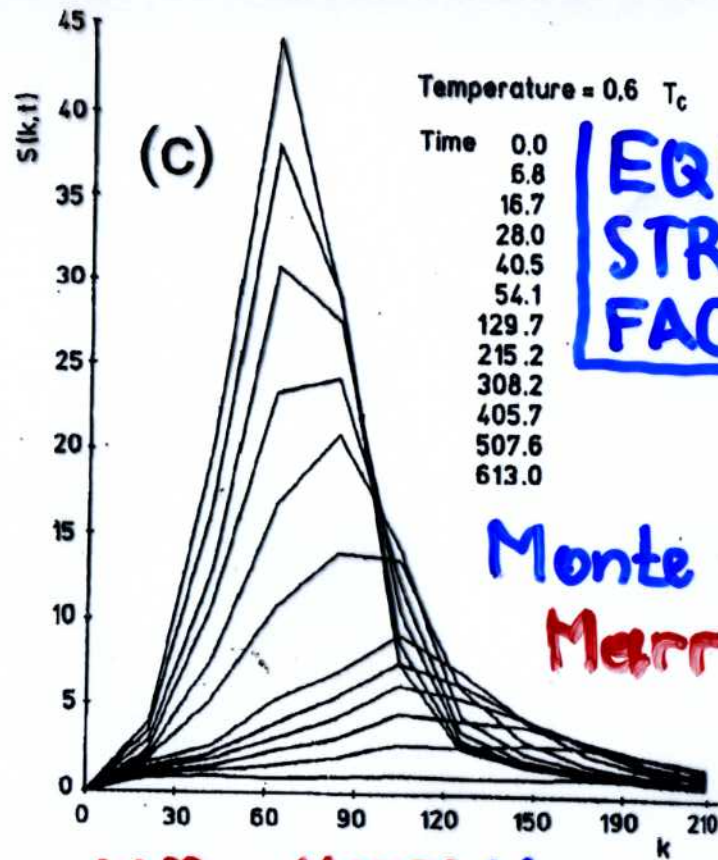
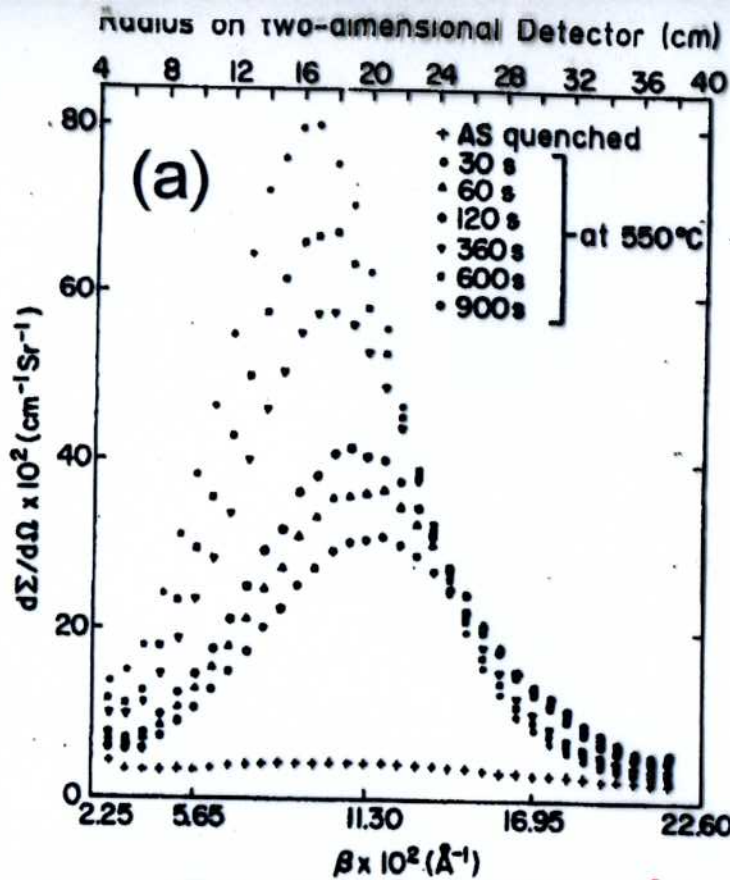
spinodal

concentration



unstable wavepacket : growing
concentration waves

Au-Pt alloy
Singhal et al. (1978)

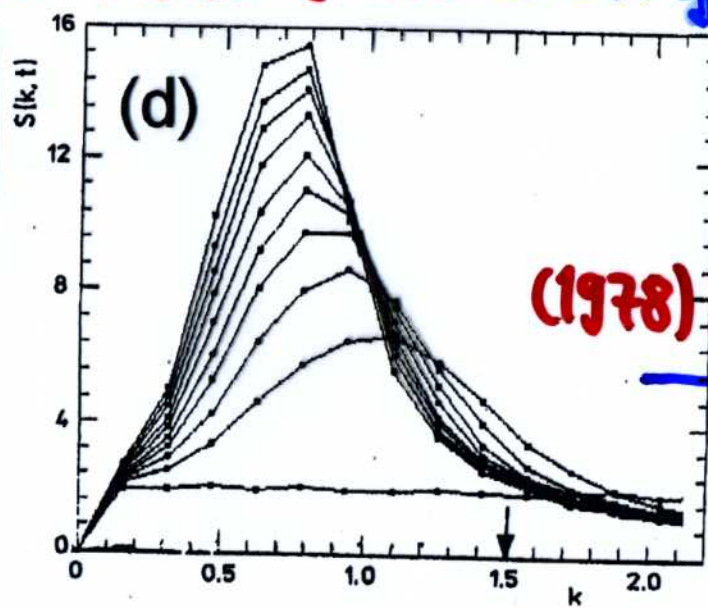
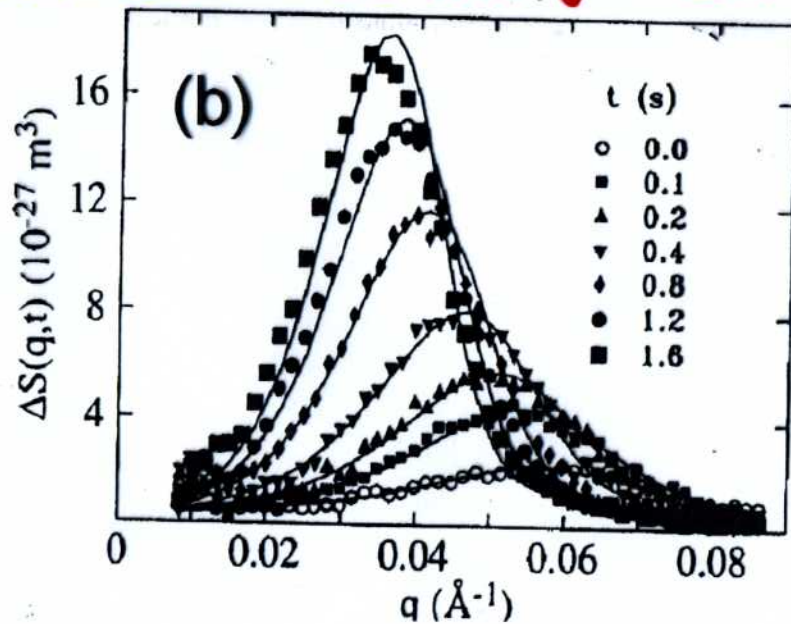


EQUAL-TIME STRUCTURE FACTOR

Monte Carlo (1975)
Merro et al.

Curves: fit to Langer-Baron-Miller (1975) theory (nonlinear extension of Cahn-Hilliard th.)

Al-Zn alloy
Mainville et al. (1997)



(1978) Milchev et al.

→ numerical solution of discretized C-H theory

