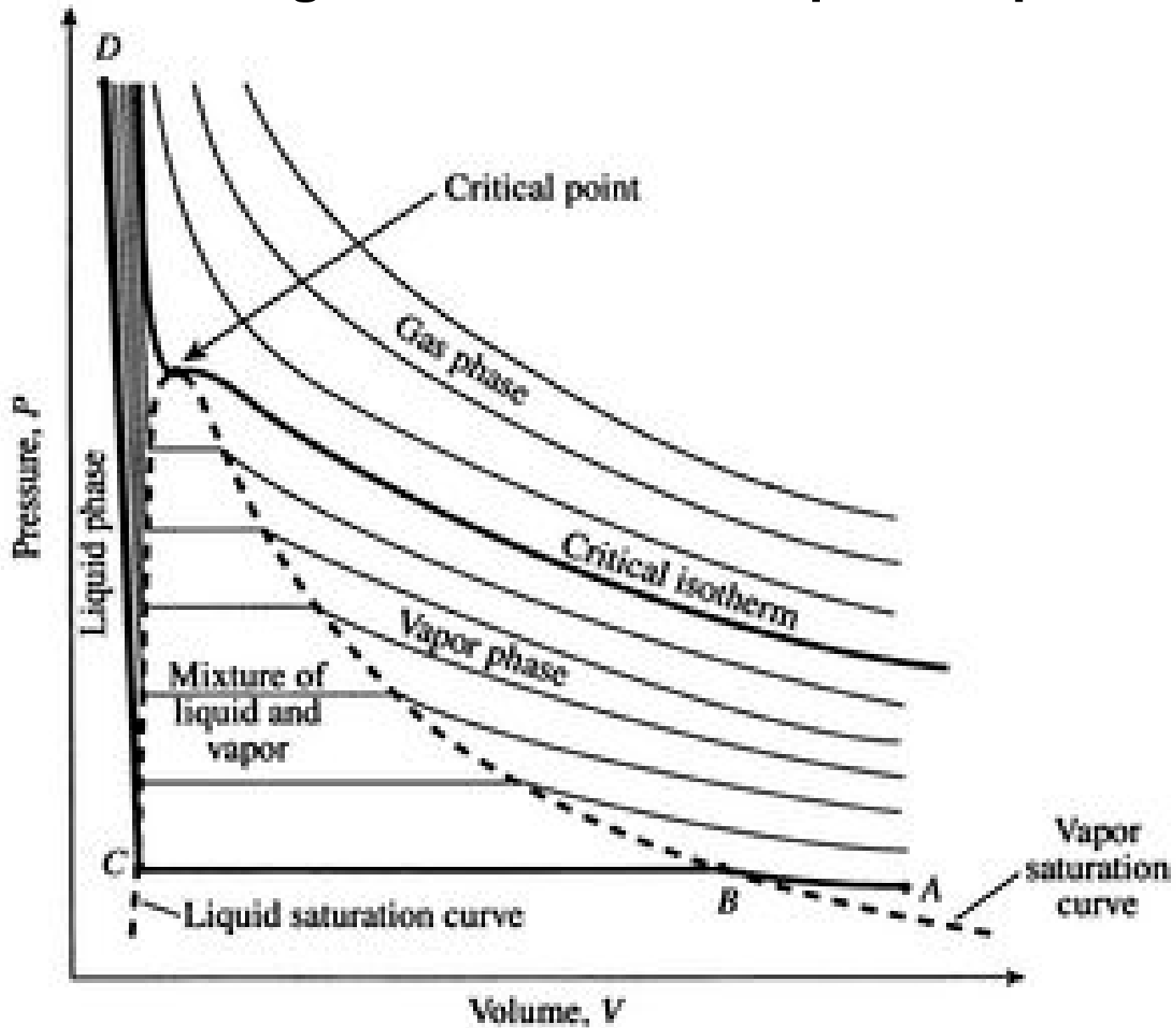
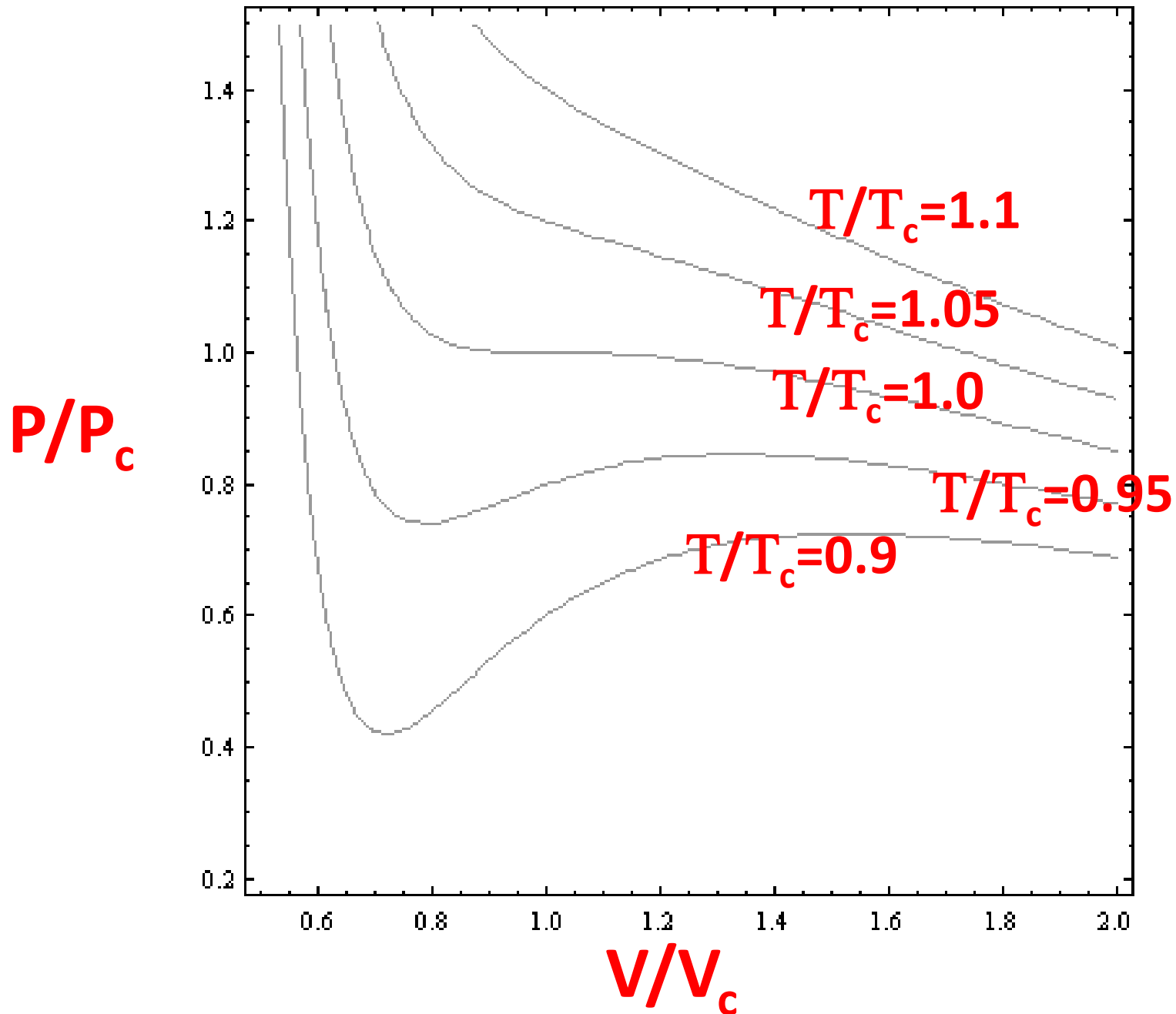


P-V Diagram of Realistic Liquid / Vapor



Van der Waals Isotherms



The Law of Corresponding States in the van der Waals Gas

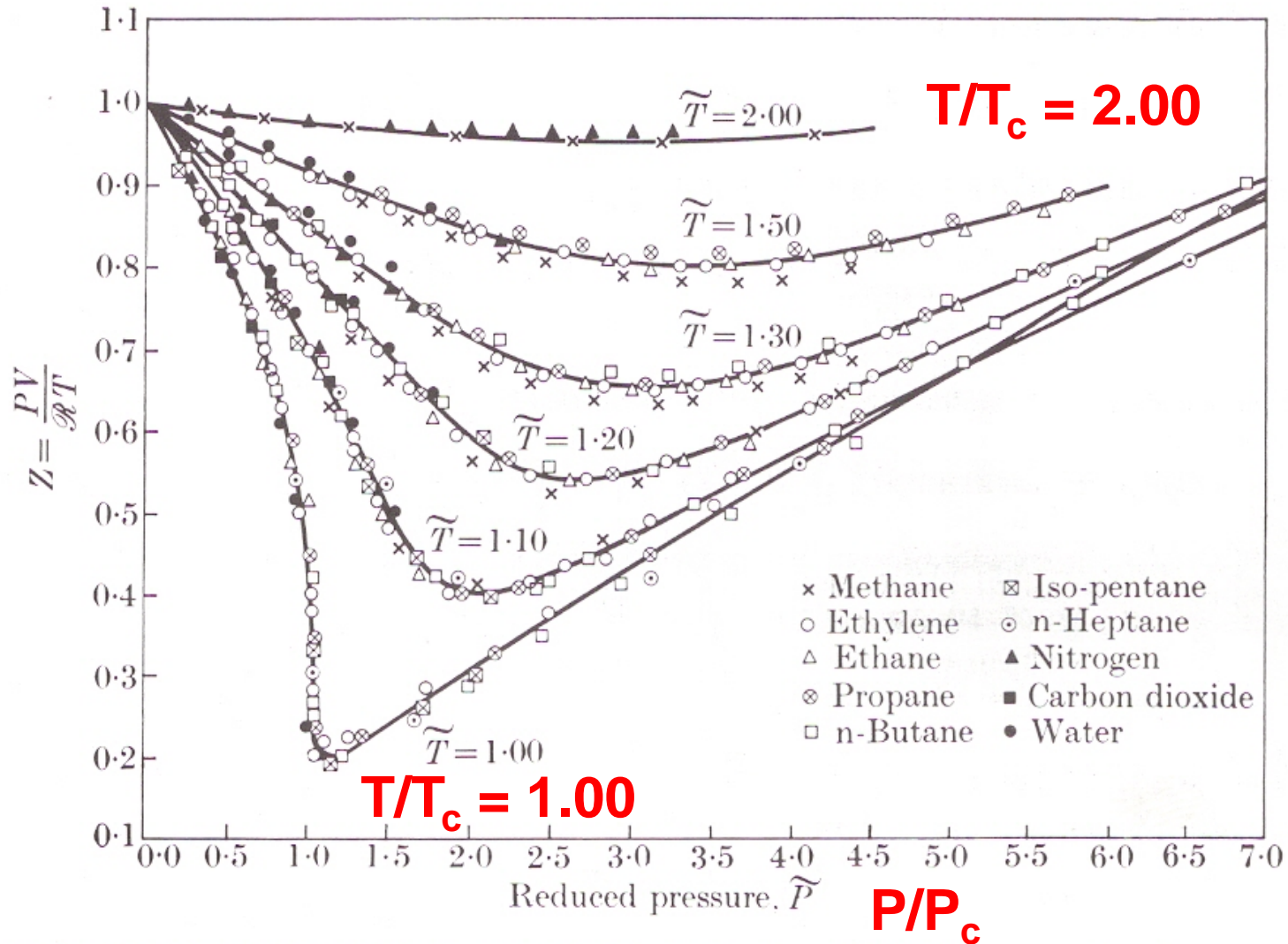
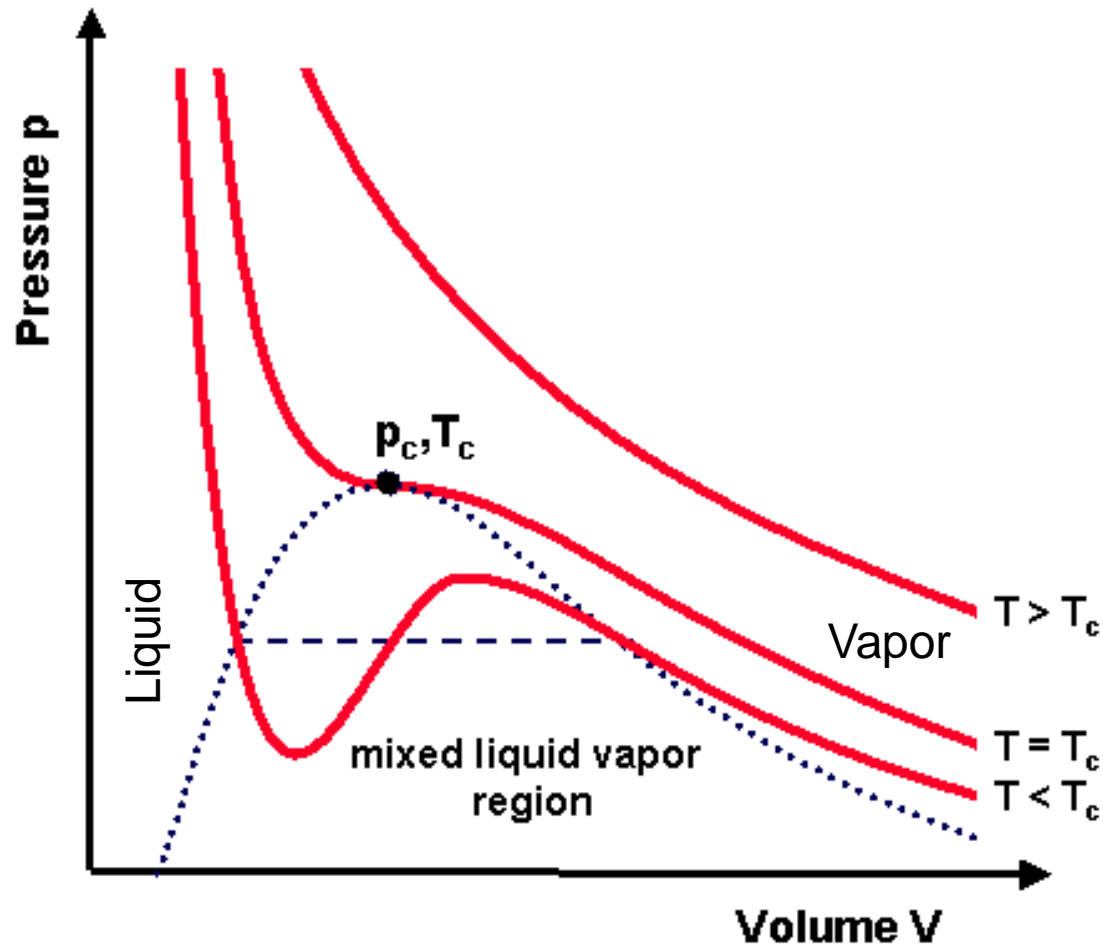


FIG. 5.3. Dependence of the compressibility ratio $Z \equiv PV/RT$ upon reduced pressure \tilde{P} for different reduced temperatures \tilde{T} . The fact that the data for a wide variety of fluids fall on identical curves supports the law of corresponding states. After Su (1946).

Van der Waals isotherms



2 Equal Area Isobar Construction

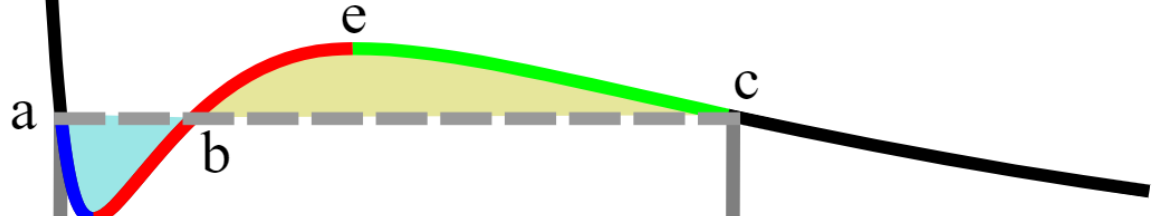
van der Waals isotherm oscillation and Maxwell's equal areas. Maxwell's rule eliminates the oscillating behavior of the isotherm in the phase transition zone by defining it as a certain isobar in that zone. The isotherm is for a reduced temperature of $T/T_c=0.9$.

P

1

https://en.wikipedia.org/wiki/Van_der_Waals_equation

P_V



0

V_L

1

2

V_G

3

4

V