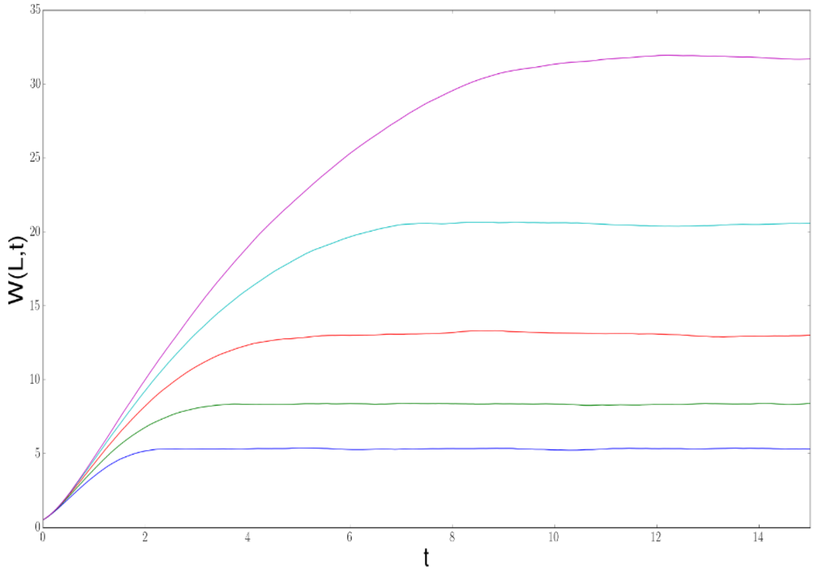
Scaling for Interface Movement in a Random Medium

(Siddharth Mansingh, NISER)

Shown below: Interface width W(L,t) at time t in a system of size L



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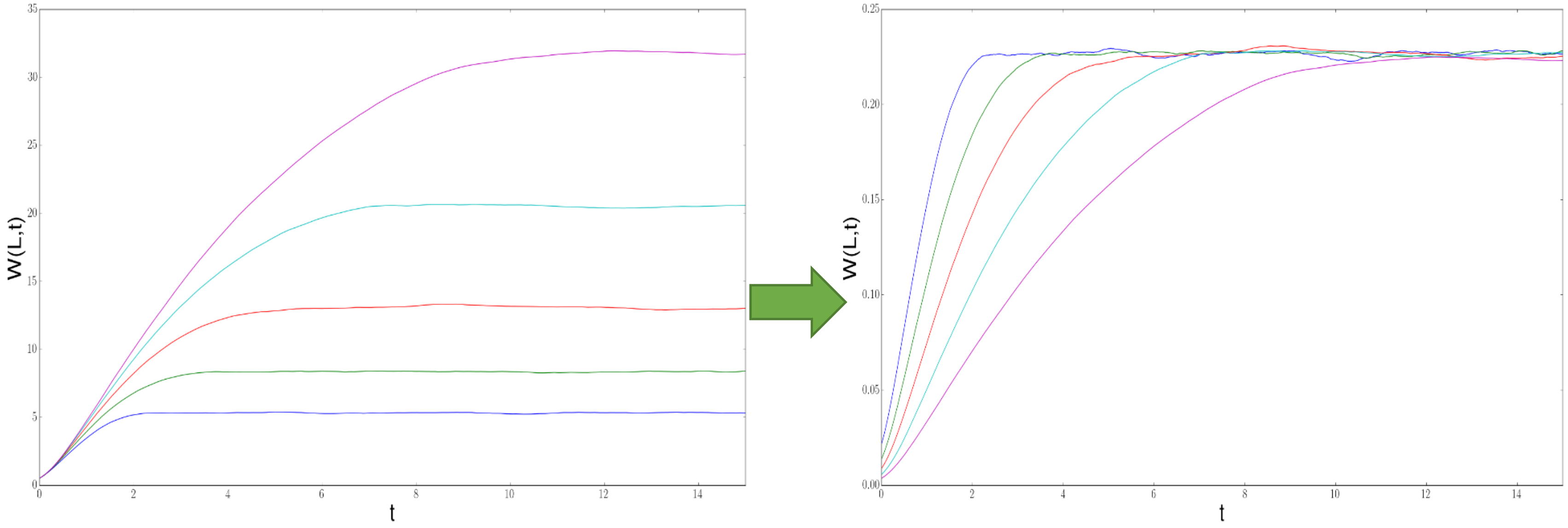

Squash by a factor L^{χ} with $\chi = 0.63$

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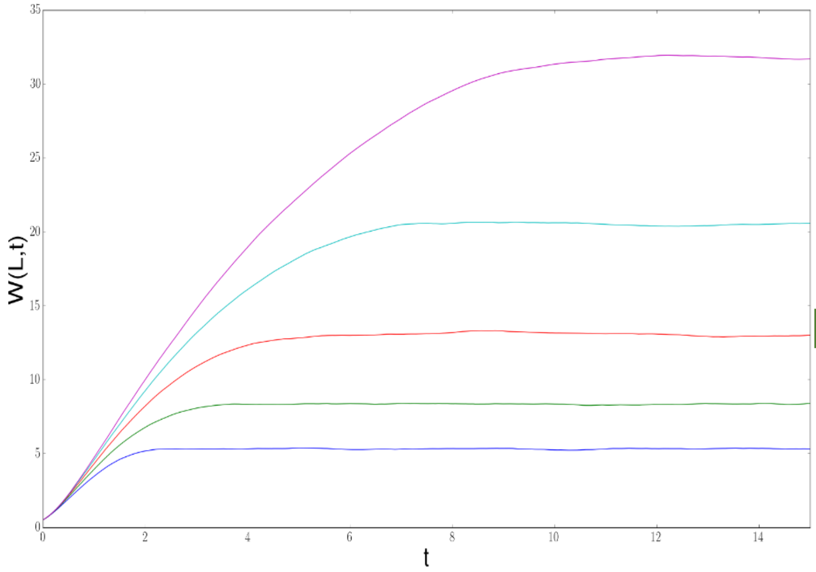

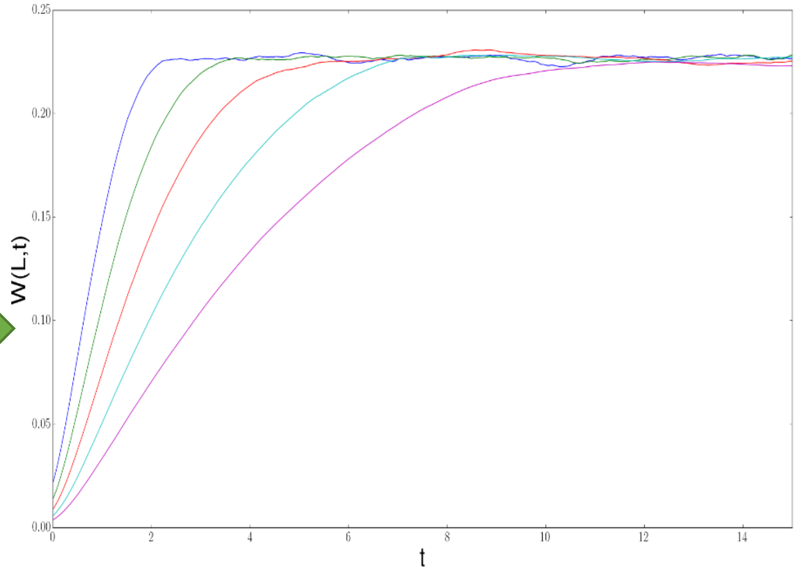

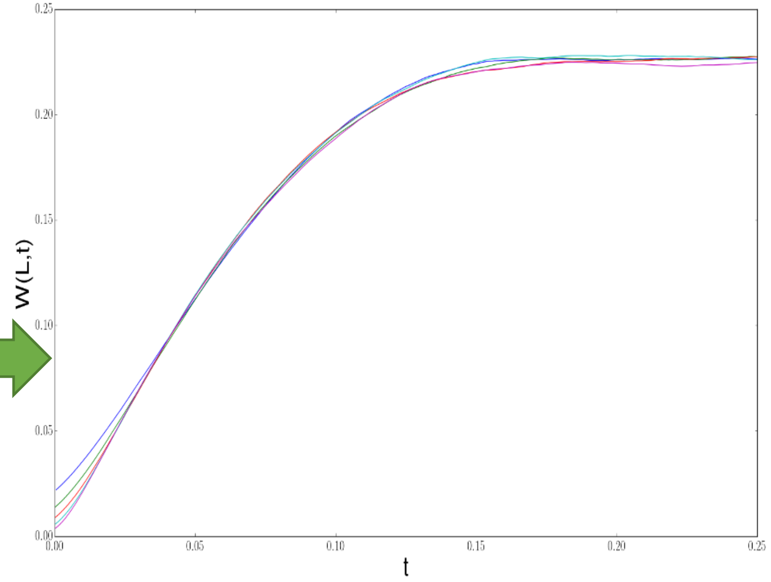

Squash by a factor L^{χ} with $\chi = 0.63$

Squish by a factor L^{z} with $z = 1.55$

$$W(L,t) \sim L^{\chi}\, Y\left(\frac{t}{L^{z}}\right)$$

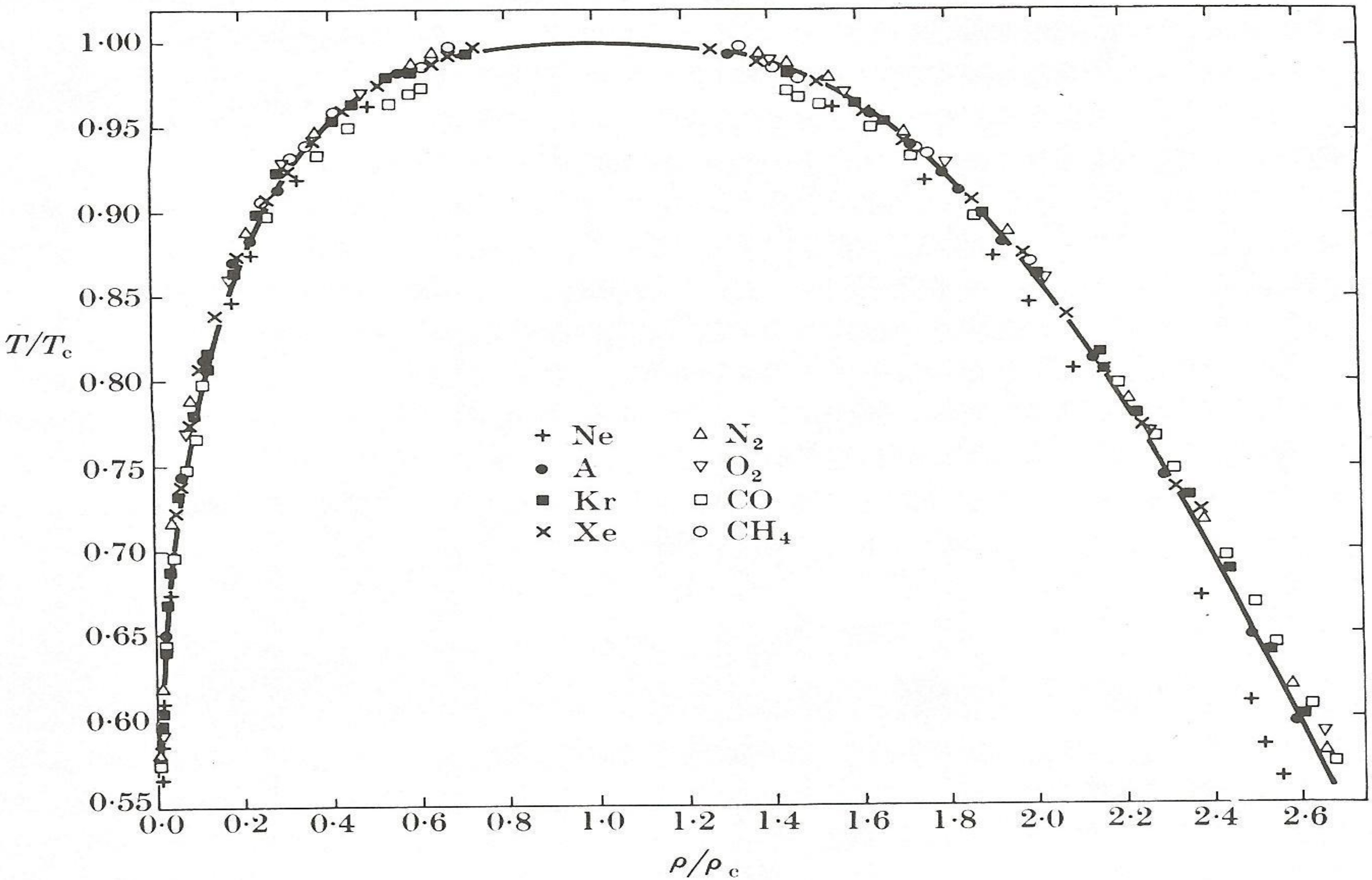

FIG. 1.8. Measurements on eight fluids of the coexistence curve (a reflection of the $P\rho T$ surface in the ρT plane analogous to Fig. 1.3). The solid curve corresponds to a fit to a cubic equation, i.e. to the choice $\beta = \frac{1}{3}$, where $\rho - \rho_c \sim (-\epsilon)^{\beta}$. From Guggenheim (1945).

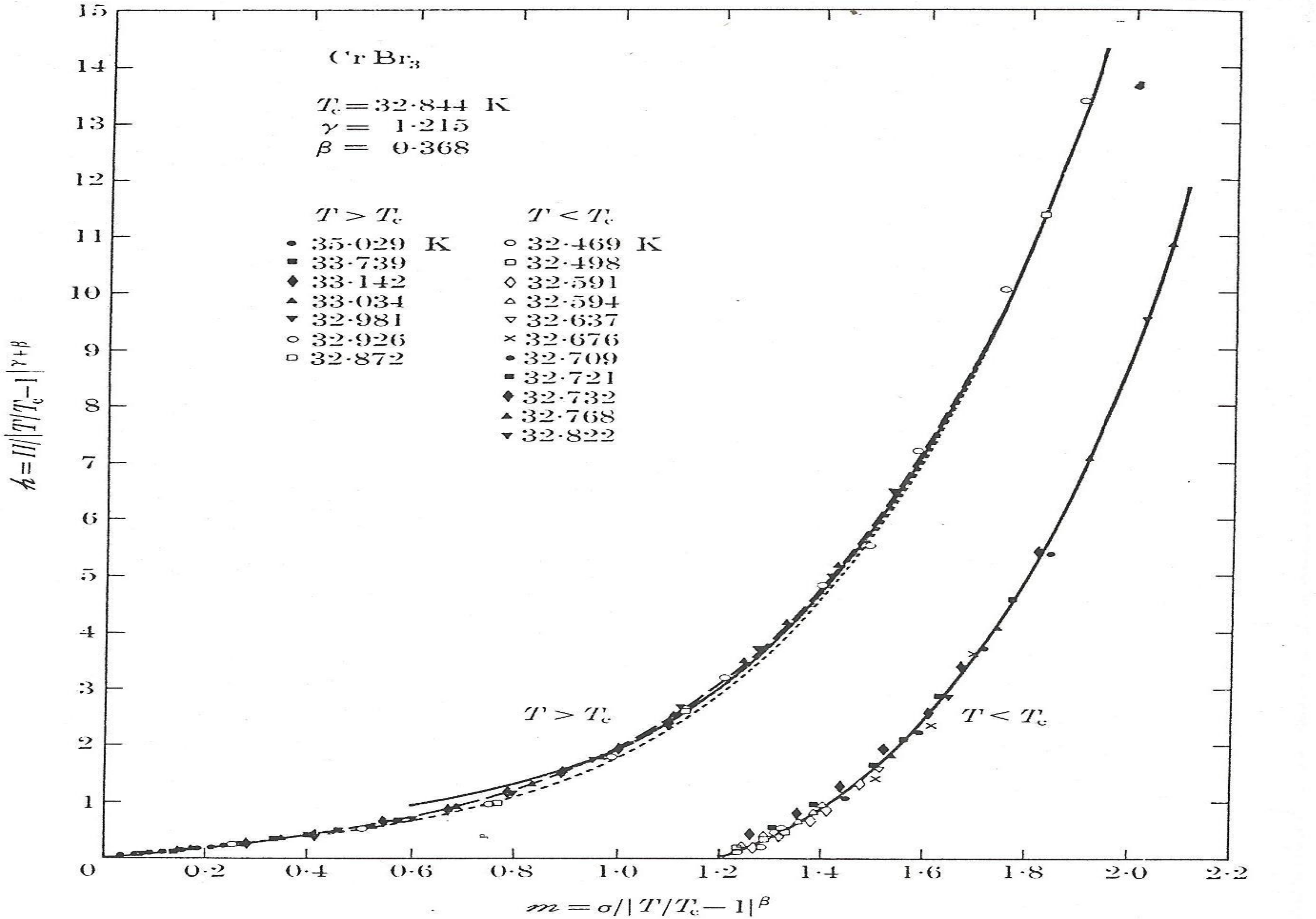

FIG. 11.4. Scaled magnetic field h is plotted against scaled magnetization m for the insulating ferromagnet $CrBr_3$, using data from seven supercritical ($T > T_c$) and from eleven subcritical ($T < T_c$) isotherms. Here $\sigma \equiv M/M_0$. After Ho and Litster (1969).