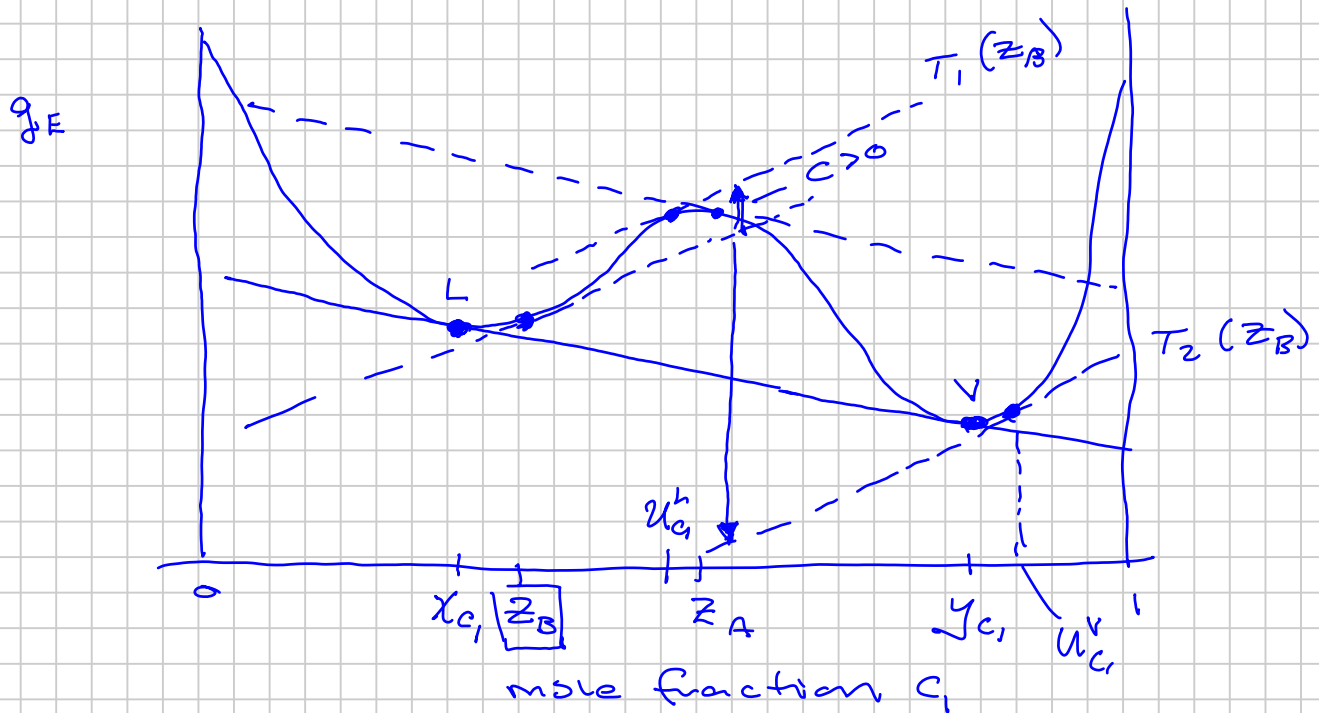


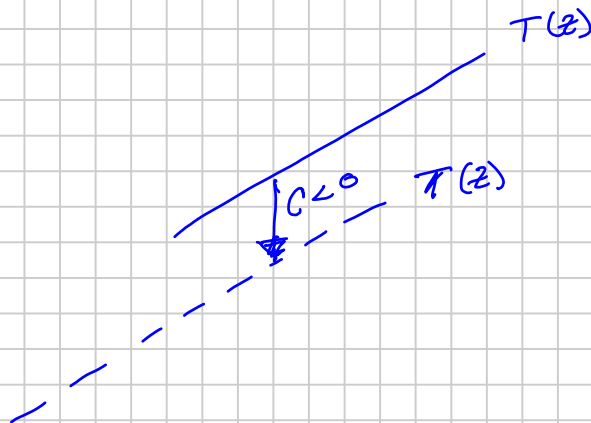
Tangent Plane Criterion for Stability Analysis Binary (P, T)



$$g_E \sim \sum z_i \cdot \ln f_i$$

- ① $\left(\frac{dg_E}{dz}\right)_L = \left(\frac{dg_E}{dz}\right)_V$
- ② on the same tangent line

$$\left. \begin{aligned} \mu_{iL} &= \mu_{iV} \\ f_{iL} &= f_{iV} \end{aligned} \right\} \text{Equilibrium Condition}$$



$$\left[\mu_i(z) = \mu_i(u) + C \right]$$

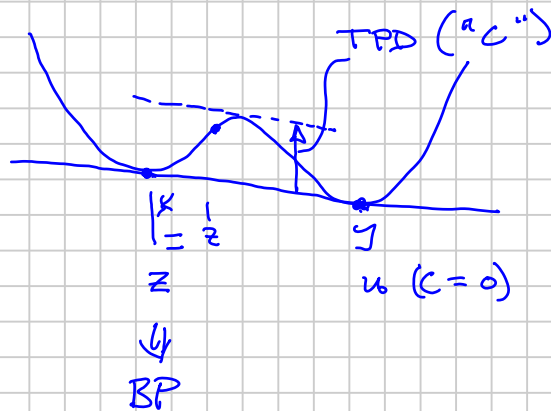
Same slopes

$$\frac{d\mu_i}{dz}$$

displaced by C

$$C = 0$$

$$\mu(z) = \mu(u)$$



Two-Phase Solution:

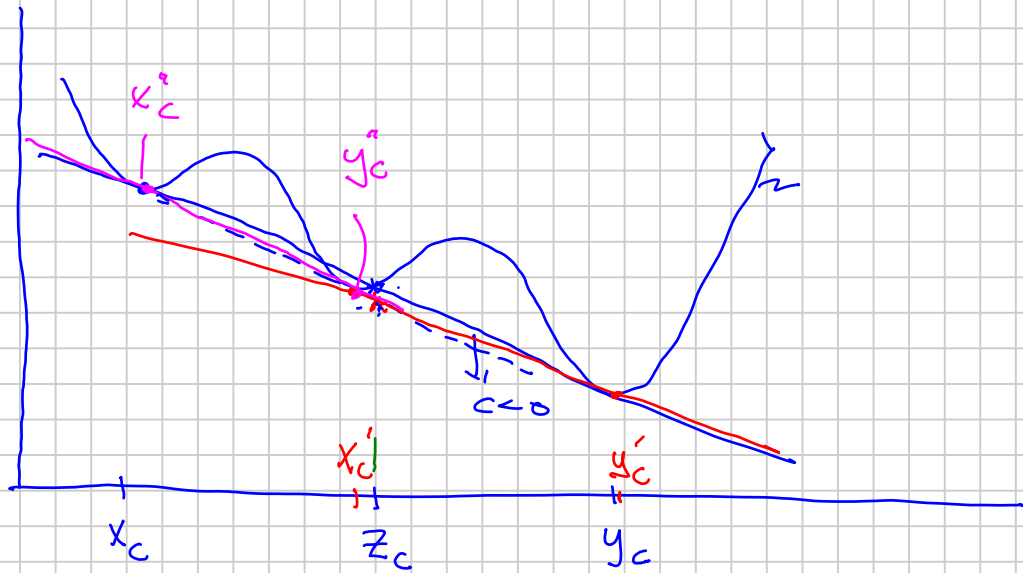
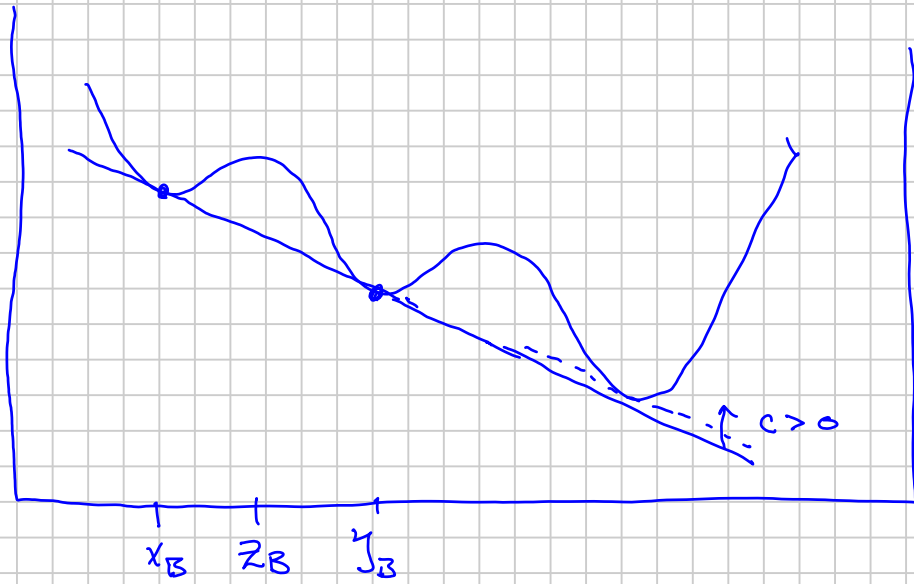
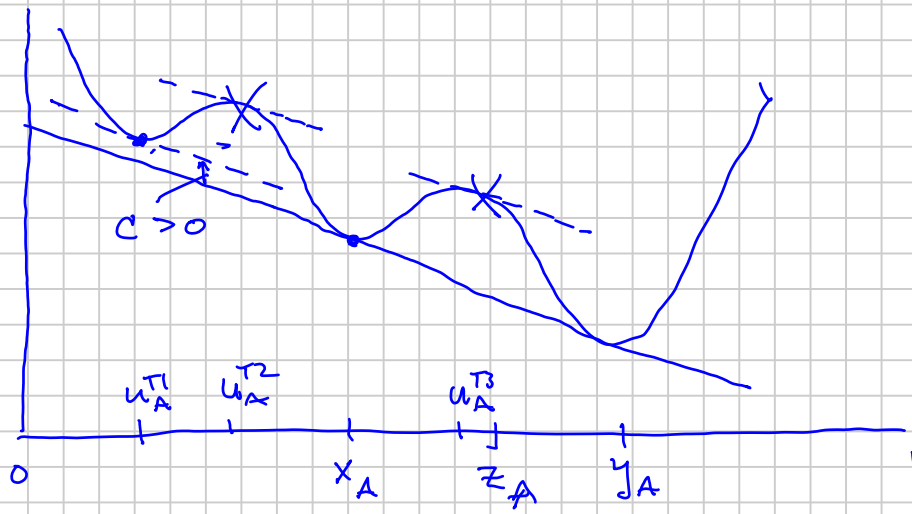
$$f_{Li} = f_{vi}$$

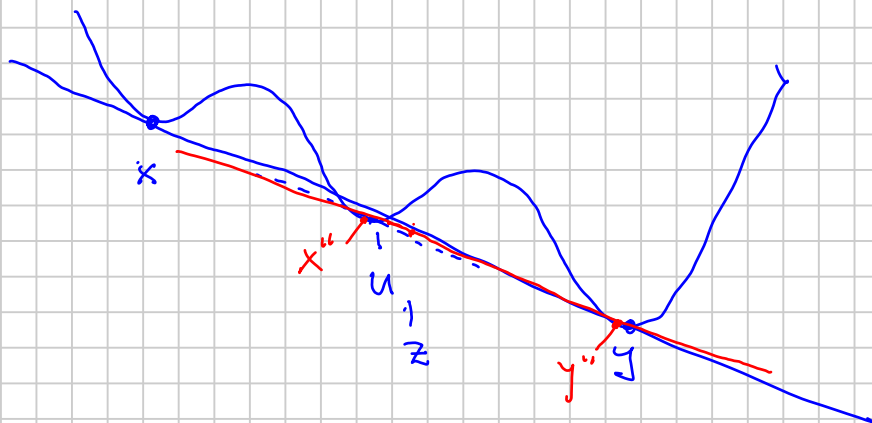
$$\mu_{Li} = \mu_{vi} = \mu_i^{EQ}$$

Test Phase u_i : $\mu_i^{Test}(u)$

$$\underbrace{\mu_{Li} = \mu_{vi} = \mu_i^{EQ}} = \mu_i^{Test}(u) + C$$

\uparrow
 $C > 0$
 $C < 0$





$y' - x''$ Line @ z lower q_F
 $y - x$ Line @ z

