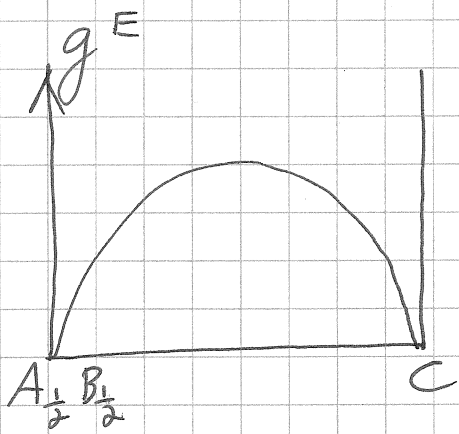
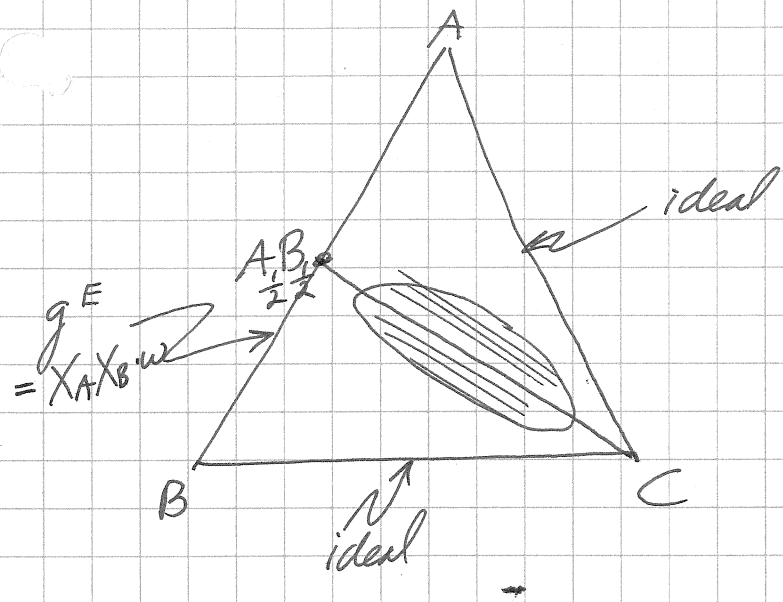


Bragg-Williams



Along the line ($A_{\frac{1}{2}} B_{\frac{1}{2}} - C$): $X_{A_{\frac{1}{2}} B_{\frac{1}{2}}} = 1 - X_C = X_A + X_B$ ($X_A = X_B$)
 $X_A = X_B = \frac{1 - X_C}{2}$

$X_{A_{\frac{1}{2}} B_{\frac{1}{2}}} ("A_{\frac{1}{2}} B_{\frac{1}{2}}") + X_C C \rightarrow \text{solution}$

$$g^E = g^E - (1 - X_C) g_{A_{\frac{1}{2}} B_{\frac{1}{2}}}^E$$

$$g^E = w X_A X_B - (X_A + X_B) \left(\left(\frac{1}{2} \right) \left(\frac{1}{2} \right) w \right)$$

$$= w \left[\frac{(1 - X_C)^2}{4} - \frac{(1 - X_C)}{4} \right]$$

$$= -\frac{w}{4} X_C (1 - X_C)$$

If $w < 0$, then $g^E > 0$ and a miscibility gap will appear.