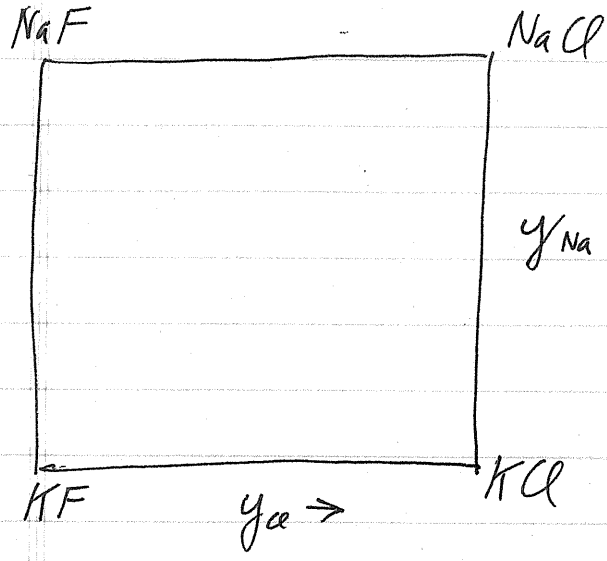
EQUATIONS (I-119) to (I-122)
in more recent notation



y_i = site fraction

$$y_{Na} = \frac{n_{Na}}{n_{Na}+n_K} = (1-y_K)$$

$$y_{Cl} = \frac{n_{Cl}}{n_{Cl}+n_F} = (1-y_F)$$

$$\Delta G^{exchange} = (g^\circ_{NaF} + g^\circ_{KCl} - g^\circ_{NaCl} - g^\circ_{KF})$$

$$g = (y_{Na}y_{Cl}\,g^\circ_{NaCl} + y_K y_F\,g^\circ_{KF} + y_{Na}y_F\,g^\circ_{NaF} + y_K y_{Cl}\,g^\circ_{KCl})$$

$$+RT(y_{Na}\ln y_{Na} + y_K \ln y_K)$$
$$+RT(y_F \ln y_F + y_{Cl}\ln y_{Cl})$$

$$+ y_{Na}(y_F y_{Cl}\,\alpha_{NaF\text{-}NaCl}) + y_K(y_F y_{Cl}\,\alpha_{KF\text{-}KCl})$$
$$+ y_F(y_{Na}y_K\,\alpha_{NaF\text{-}KF}) + y_{Cl}(y_{Na}y_K\,\alpha_{NaCl\text{-}KCl})$$

$$- y_{Na}y_K y_F y_{Cl}\,\Lambda$$

where:

$$\alpha_{NaF\text{-}NaCl} = \sum_{i=0}{}^{i}L_{Na\,F,Cl}(y_F - y_{Cl})^i$$

$$\alpha_{KF\text{-}KCl} = \sum_{i=0}{}^{i}L_{K\,F,Cl}(y_F - y_{Cl})^i$$

$$\alpha_{NaF\text{-}KF} = \sum_{i=0}{}^{i}L_{Na,K\,F}(y_{Na} - y_K)^i$$

$$\alpha_{NaCl\text{-}KCl} = \sum_{i=0}{}^{i}L_{Na,K\,Cl}(y_{Na} - y_K)^i$$

$$\Lambda = (\Delta G^{exchange})^2/ZRT$$