

When your ratio, $R = \frac{\lambda_1}{\lambda_2}$, then:

$$E = E^\circ - \frac{RT}{2F} * \ln(\delta_{\lambda_2} * \frac{R_X - R}{R - R_R})$$

If inverting the ratio (letting $R = \frac{\lambda_2}{\lambda_1}$) does not change the value of E , then:

$$E^\circ - \frac{RT}{2F} * \ln(\delta_{\lambda_2} * \frac{R_X - R}{R - R_R}) = E^\circ - \frac{RT}{2F} * \ln(\delta_{\lambda_1} * \frac{\frac{1}{R_X} - \frac{1}{R}}{\frac{1}{R} - \frac{1}{R_R}})$$

Or, more simply:

$$\delta_{\lambda_2} * \frac{R_X - R}{R - R_R} = \delta_{\lambda_1} * \frac{\frac{1}{R_X} - \frac{1}{R}}{\frac{1}{R} - \frac{1}{R_R}}$$

Here I'll show that that's the case.

Assume that $R = \frac{I_1}{I_2}$, $R_X = \frac{I_{1X}}{I_{2X}}$, $R_R = \frac{I_{1R}}{I_{2R}}$, $\delta_{\lambda_1} = \frac{I_{1X}}{I_{1R}}$, and

$$\delta_{\lambda_2} = \frac{I_{2X}}{I_{2R}}$$

Then,

$$\delta_{\lambda_1} * \frac{\frac{1}{R_X} - \frac{1}{R}}{\frac{1}{R} - \frac{1}{R_R}} = \frac{I_{1X}}{I_{1R}} * \frac{\frac{I_{2X}}{I_{1X}} - \frac{I_2}{I_1}}{\frac{I_2}{I_1} - \frac{I_{2R}}{I_{1R}}}$$

We can factor a $\frac{I_{2X}}{I_{2R}}(\delta_{\lambda_2})$ out of the product, multiply $\frac{I_{1X}}{I_{1R}}$ back in, and multiply

by $1 = \frac{I_1}{I_2}$ to get:

$$\delta_{\lambda_2} * \frac{\frac{I_1}{I_2} - \frac{I_{1X}}{I_{2X}}}{\frac{I_{1R}}{I_{2R}} - \frac{I_1}{I_2}} = \delta_{\lambda_2} * \frac{R_X - R}{R - R_R}$$