General Principle

. Goal : Predicted breeding value for animal i

$$\hat{u}_i = (y_i - \mu) \cdot b$$

b → weighting factor

y_i → phenotypic record

μ → suitable correction for non-genetic factors that influence y

- Combine information from different sources can be done by aggregating them into index (I)

$$\hat{u}_i = I = b_1 \cdot y_1^* + b_2 \cdot y_2^* + \dots + b_k \cdot y_k^* = b^T y^*$$

with $b^T = [b_1 \; b_2 \; b_3 \dots b_k]$ } unknown

$y^{*T} = [y_1^* \; y_2^* \; y_3^* \dots y_k^*]$ } known

y_e^* is $(y_e - \mu)$ which is y_e corrected for non genetic factors