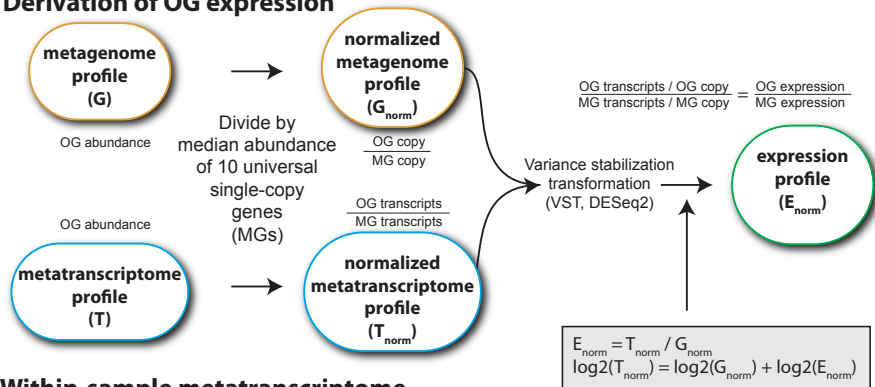


A. Derivation of OG expression



B. Within-sample metatranscriptome decomposition:

$$\log_2(T_{\text{norm}}) = \log_2(G_{\text{norm}}) + \log_2(E_{\text{norm}})$$

C. Between-sample metatranscriptome squared Euclidean distance decomposition:

$$d(\log_2(T_{\text{norm } i,j})) = d(\log_2(G_{\text{norm } i,j})) + d(\log_2(E_{\text{norm } i,j})) + \sum_k 2 \cdot (\log_2(E_{\text{norm } j,k}) - \log_2(E_{\text{norm } i,k})) \cdot (\log_2(G_{\text{norm } j,k}) - \log_2(G_{\text{norm } i,k}))$$

Abundance component
(Organismal turnover)

Expression component
(Acclimatization)

Interaction