

A**Response delta**

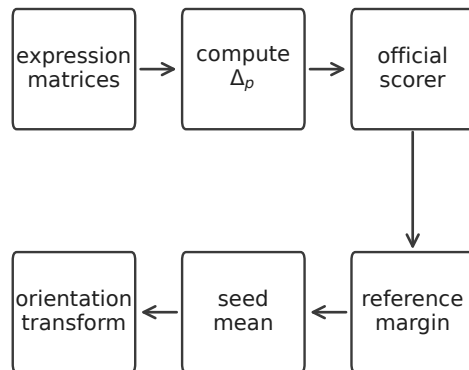
Cells c_p stimulated, c_0 control

$$\Delta_{p,g} = \bar{X}_{c_p,g} - \bar{X}_{c_0,g}$$

Predicted: $\hat{\Delta}_{p,g}$ from imputed cells

top- k DEGs: $G_p^{(k)} = \text{argtop}_k |\Delta_{p,\cdot}|$

Vector form: $\Delta_p, \hat{\Delta}_p \in \mathbb{R}^k$

B**Metric-calibrated replay****C****Evidence levels****Primary**

Replogle_K562essential
official replay (PCC-delta top100)

Secondary

RPE1 reconstructed protocol
lower-95 confidence robustness gate

Contextual

Blind455 internal screen
validation evidence only

D**Reference margin**