

conservative linear unbiased estimation

model: $\mathbf{y} = H\mathbf{x} + \mathbf{v}$, $\text{cov}(\mathbf{v}) = R \in \mathcal{A}$

estimator: $\hat{\mathbf{x}} = K\mathbf{y}$, $KH = I$, $P \succeq \text{cov}(K\mathbf{v})$

$$\mathcal{A} = \{R\}$$

optimal estimator: BLUE

exact and unique closed-form solution
 $K^* = P^* H^\top R^{-1}$, $P^* = \left(H^\top R^{-1} H\right)^{-1}$

$$\mathcal{A} = \{R^a, R^b, \dots\}$$

optimal estimator: best CLUE

properties

*general CLUE
using RO*

special cases