

given

$a_i \in \mathbb{R}^n$ the measurement vectors

$x \in \mathbb{R}^n$ original vector

$w_i \in \mathbb{R}$ measurement noise

$$y_i = a_i^T x + w_i$$

$$\hat{x} = \left(\sum_i a_i a_i^T \right)^{-1} \sum_i y_i a_i$$