
Old, Incorrect Version

$$\begin{aligned}\hat{\underline{z}}(\underline{m}) &= \{P^{-1} + C^T R^{-1} C\}^{-1} C^T R^{-1} (\underline{m} - C \underline{\mu}) \\ &= \{P^{-1} + C^T R^{-1} C\}^{-1} (C^T R^{-1} \underline{m} + P^{-1} \underline{\mu})\end{aligned}\quad (3.83)$$

$$= \underline{\mu} + \left\{ [C^T \ I] \begin{bmatrix} R^{-1} & 0 \\ 0 & P^{-1} \end{bmatrix} \begin{bmatrix} C \\ I \end{bmatrix} \right\}^{-1} [C^T \ I] \begin{bmatrix} R^{-1} & 0 \\ 0 & P^{-1} \end{bmatrix} \begin{bmatrix} \underline{m} \\ \underline{\mu} \end{bmatrix}, \quad (3.84)$$

Revised, Correct Version

$$\begin{aligned}\hat{\underline{z}}(\underline{m}) &= \underline{\mu} + \{P^{-1} + C^T R^{-1} C\}^{-1} C^T R^{-1} (\underline{m} - C \underline{\mu}) \\ &= \{I^T P^{-1} I + C^T R^{-1} C\}^{-1} (C^T R^{-1} \underline{m} + I^T P^{-1} I \underline{\mu})\end{aligned}\quad (3.83)$$

$$= \left\{ [C^T \ I] \begin{bmatrix} R^{-1} & 0 \\ 0 & P^{-1} \end{bmatrix} \begin{bmatrix} C \\ I \end{bmatrix} \right\}^{-1} [C^T \ I] \begin{bmatrix} R^{-1} & 0 \\ 0 & P^{-1} \end{bmatrix} \begin{bmatrix} \underline{m} \\ \underline{\mu} \end{bmatrix}, \quad (3.84)$$
