1. Initialize $\hat{A}^{(1)}$ and set $j = 1$.
2. Minimize $\|\hat{A}^{(j)}\hat{\mathbf{x}}^{(j)} - \mathbf{y}\|$ for $\hat{\mathbf{x}}^{(j)}$:

$$\mathbf{x}^{(j+1)} := (\hat{A}^{(j)T}\hat{A}^{(j)})^{-1}\hat{A}^{(j)T}\mathbf{y}.$$

3. Minimize $\|\hat{A}^{(j)}\hat{\mathbf{x}}^{(j+1)} - \mathbf{y}\|$ for $\hat{A}^{(j)}$ (subject to constraints $0 \leq \alpha_k \leq 1$ for all $1 \leq k \leq K$). Increase the iteration index $j := j + 1$.
4. Repeat steps 2 and 3.