

$$\begin{bmatrix} -1 & 1 & 0 & \cdots & -0 & -0 \\ 0 & -1 & 1 & & -0 & -0 \\ & \vdots & & \ddots & & \vdots \\ 0 & 0 & 0 & \cdots & -1 & 1 \end{bmatrix} : \text{Difference Operator}$$

λ : Tuning Parameter

$$\begin{bmatrix} \hat{Y}_{1,1} & \cdots & \hat{Y}_{1,n} \\ \vdots & \ddots & \vdots \\ \hat{Y}_{m,1} & \cdots & \hat{Y}_{m,n} \end{bmatrix}$$

Hyperspectral Image
from HyRes

Optimization Function

$$\xrightarrow[\substack{[\mathfrak{d}_1 \quad \mathfrak{d}_2 \quad \cdots \quad \mathfrak{d}_p], \lambda}]{\min_{\mathbb{X}} \|\hat{Y} - \mathbb{X}\|_1 + \lambda \|\mathbb{D}\mathbb{X}\|_1}$$

$$\begin{bmatrix} \mathbb{X}_{1,1} & \cdots & \mathbb{X}_{1,n} \\ \vdots & \ddots & \vdots \\ \mathbb{X}_{m,1} & \cdots & \mathbb{X}_{m,n} \end{bmatrix}$$

Noise-free HSI

H

Y

Mi

No

R

