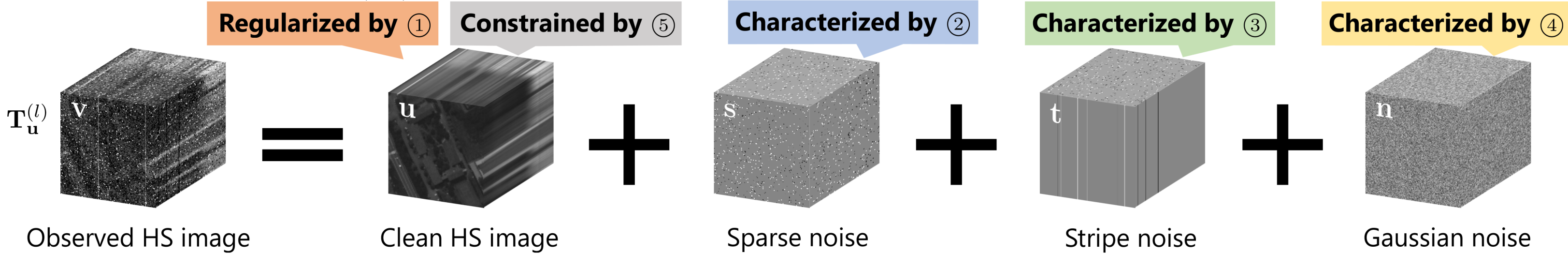


## Observation model in (15)

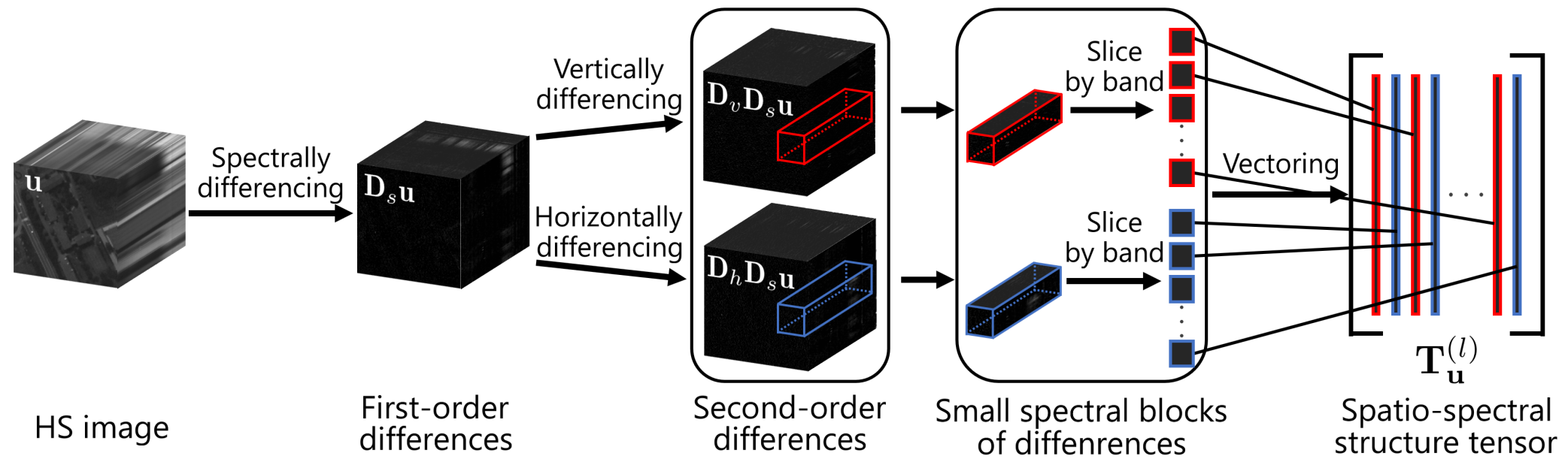


## Problem formulation in (16)

$$\min_{\mathbf{u}, \mathbf{s}, \mathbf{t} \in \mathbb{R}^N} S_3 \text{TTV}(\mathbf{u}), \quad \dots \text{①}$$

$$\text{s.t.} \begin{cases} \mathbf{s} \in B_{1,\alpha}, & \dots \text{②} \\ \mathbf{t} \in B_{1,\beta}, & \dots \text{③} \\ \mathbf{D}_v \mathbf{t} = \mathbf{0}, & \dots \text{③} \\ \mathbf{u} + \mathbf{s} + \mathbf{t} \in B_{2,\varepsilon}^v, & \dots \text{④} \\ \mathbf{u} \in R_{\underline{\mu}, \bar{\mu}}, & \dots \text{⑤} \end{cases}$$

## Construction of the spatio-spectral structure tensor in (12)



**Algorithm 1** Solving (16) based on the preconditioned primal-dual splitting method (P-PDS)