A Sequence of optimal up-collapses and reconstruction of signal s

s

$\mathbf{\Phi}_{\mathcal{V}}\mathbf{s}$

$\mathbf{\Phi}_{\mathcal{V}}\mathbf{\Psi}_{\mathcal{V}}\mathbf{s}$
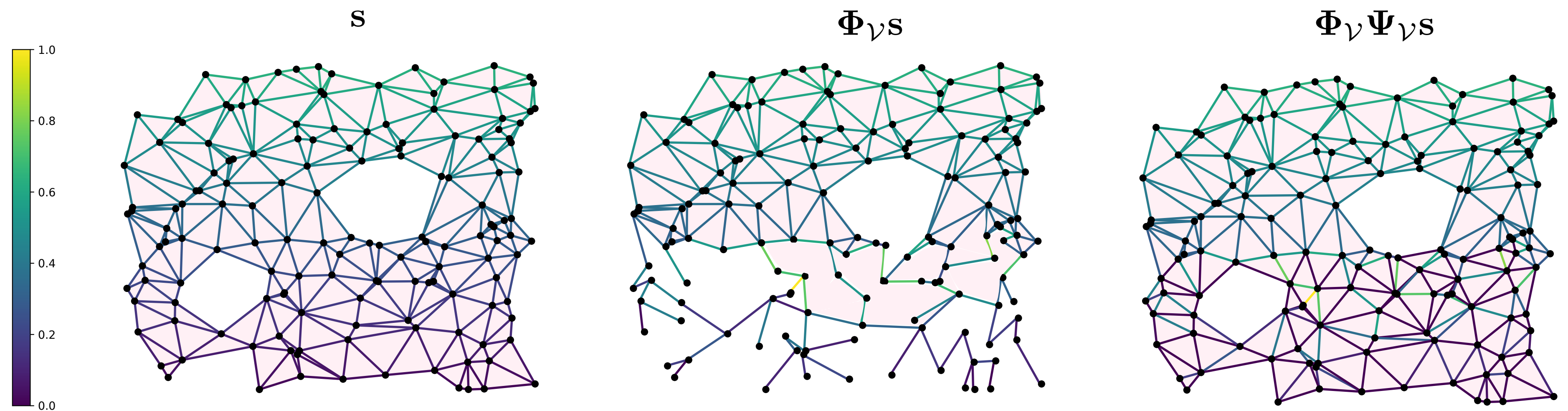
B Reconstruction error

$\left|\mathbf{s} - \mathbf{\Phi}_{\mathcal{V}}\mathbf{\Psi}_{\mathcal{V}}\mathbf{s}\right|$
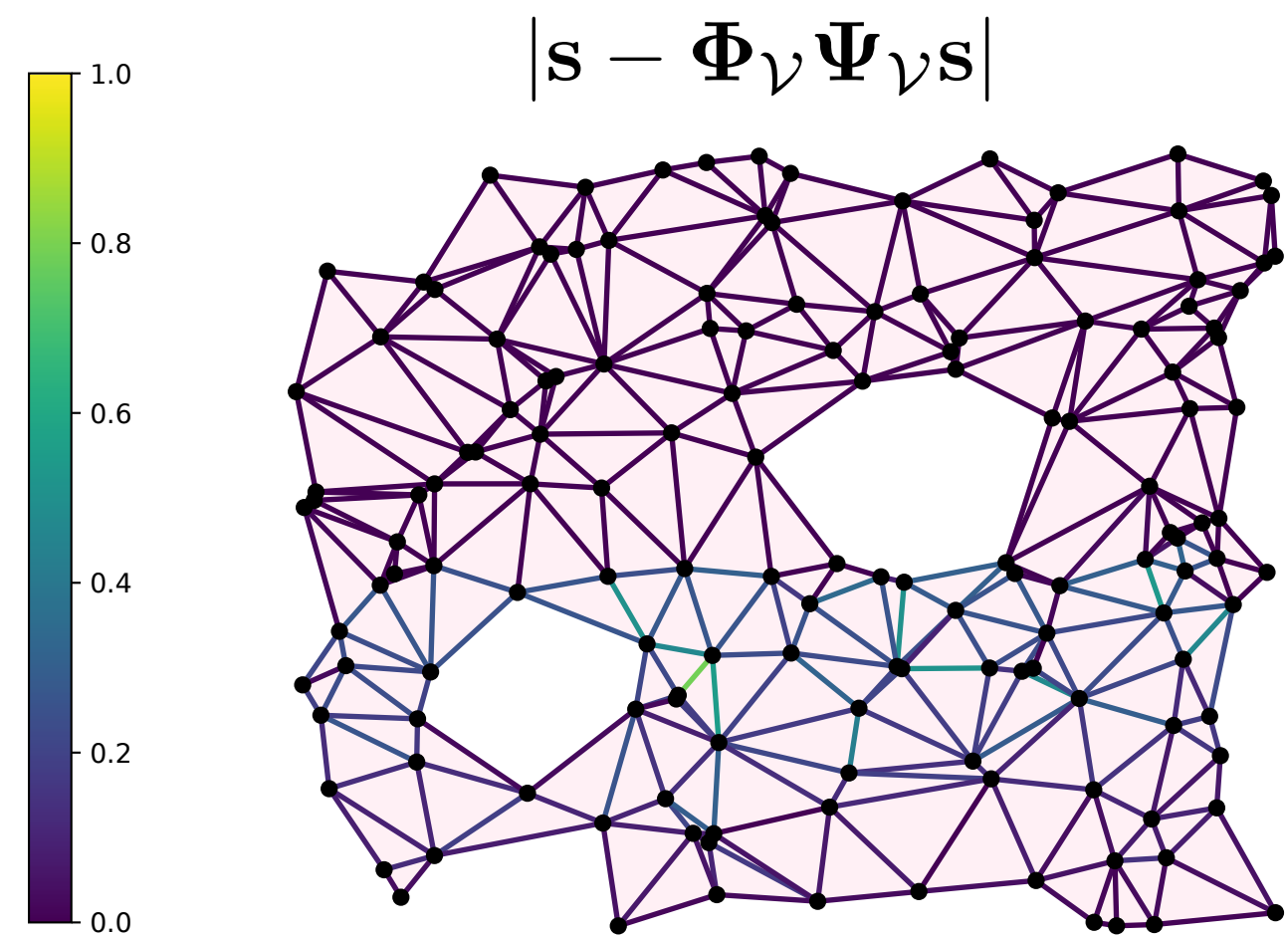
C Projection of s and $\Phi_{\mathcal{V}}\Psi_{\mathcal{V}}s$ on the Hodge decomposition

projection of s

projection of $\Phi_{\mathcal{V}}\Psi_{\mathcal{V}}s$

$\mathrm{Ker}\Delta_1$ $\qquad$ $\mathrm{Im}\partial_1^*$ $\qquad$ $\mathrm{Im}\partial_2$