

A Schrödinger Operator For Sparse Approximation Of 3D Meshes

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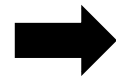
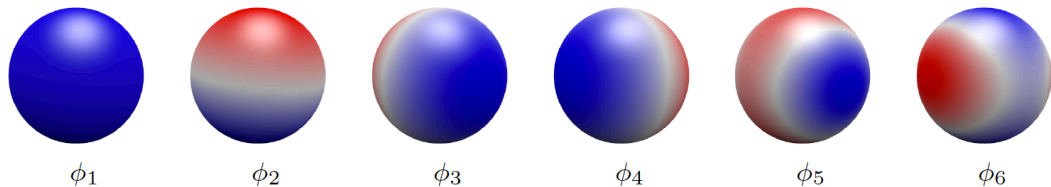


Hamiltonian Operator

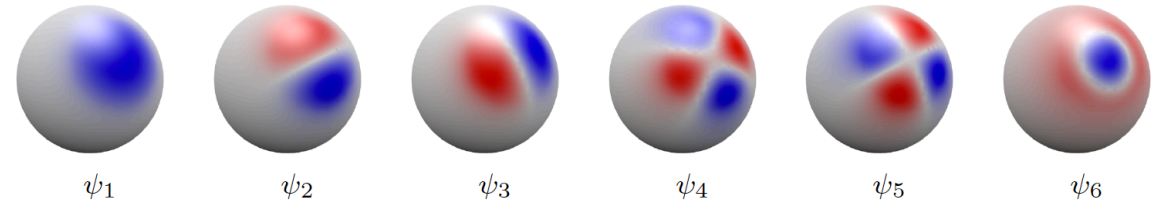
$$H = L + \mu V$$



$$L\phi_i = \lambda_i\phi_i$$



$$H\psi_i = \epsilon_i\psi_i$$



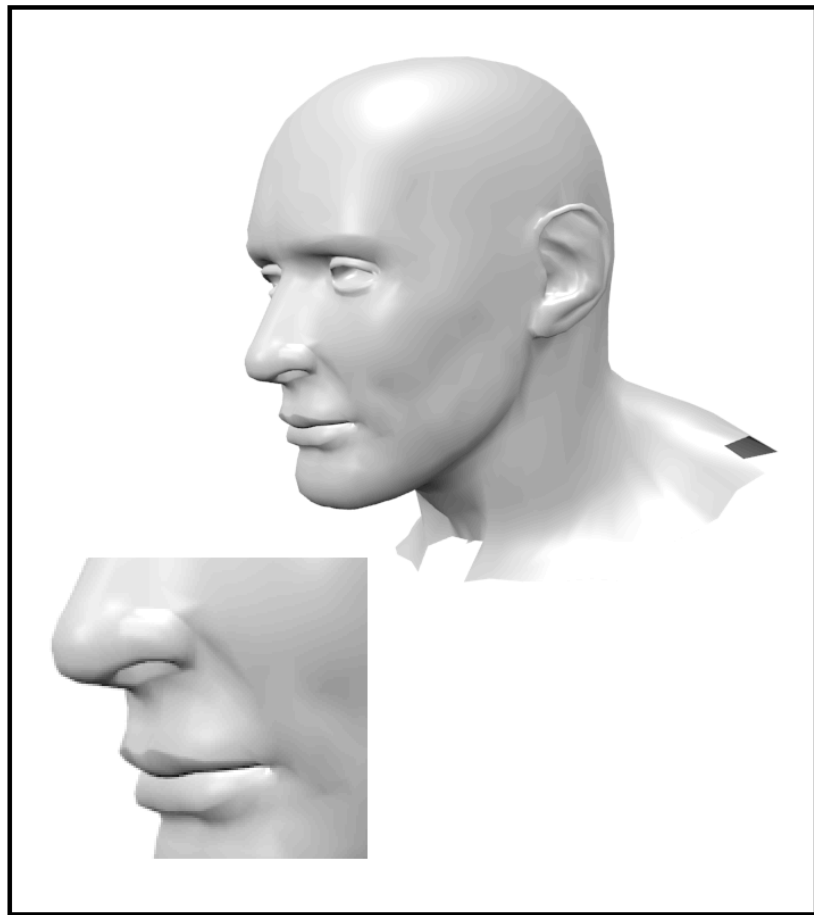
Spectral Mesh Compression

Choose V ! : Re-Ordering with Approximation Error

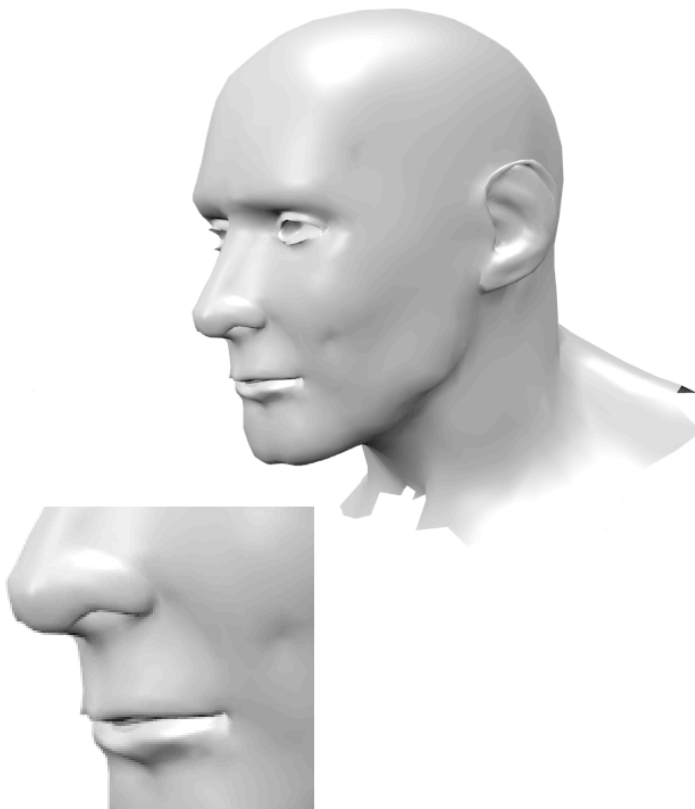
$$\mathbf{V} \propto \left| \text{Mesh}_1 - \text{Mesh}_2 \right| = \text{Error Map}$$


Use ~~Truncation~~ Sparsity: $\min_{\alpha} \|\alpha\|_0 \quad \text{s. t. } \mathbf{u} = \mathbf{D} \alpha$

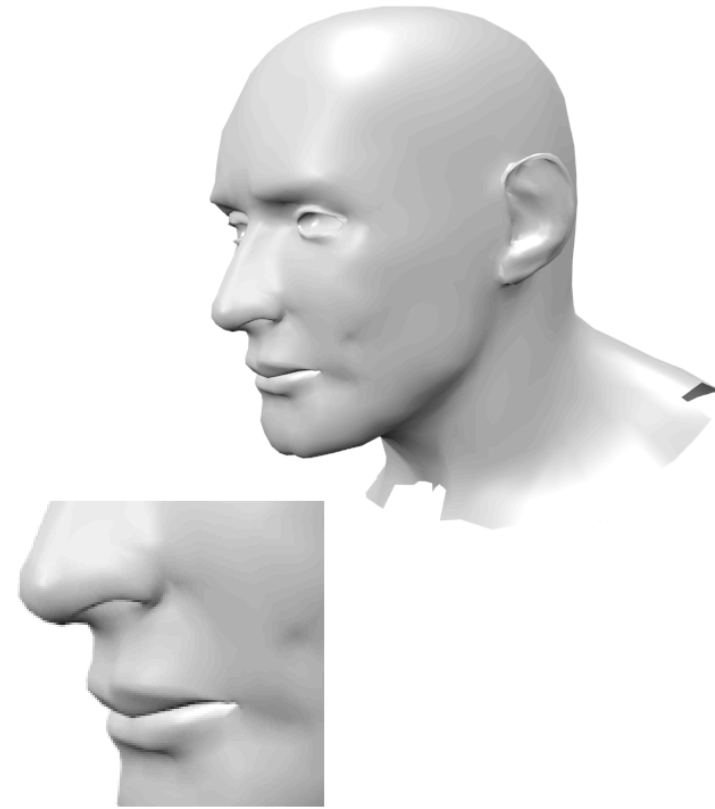
Result:



Original



Laplacian



Hamiltonian