

$b_i$  = number of basis functions (edges) in box  $i$   
 $L_\lambda$  = number of Legendre points in level  $\lambda$   
 $m$  = number of points in Lagrange polynomial interpolation  
 $d_\lambda$  = diameter of every box in level  $\lambda$

| Data            | Shape                                     | Indexing  |   |   | $\mathcal{I}_i^S$ | $\mathcal{I}_i^F$ | $\mathcal{I}_i^S$ |   |
|-----------------|---|---|---|---|-------------------|-------------------|-------------------|---|
| $Z_{ij}^{near}$ | $b_i \times b_j$                          | $\lambda_{max}, \mathcal{B}_i, \mathcal{B}_j : \mathcal{B}_j \in \mathcal{I}_i^N$ | r |   |                   |                   |                   |   |
| $I_i$           | $b_i \times 1$                            | $\lambda_{max}, \mathcal{B}_i$  | r | r |                   |                   |                   |   |
| $V_i$           | $b_i \times 1$                            | $\lambda_{max}, \mathcal{B}_i$  | w |   |                   |                   |                   | w |
| $\hat{\kappa}$  | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda$   |   |   |                   |                   |                   |   |
| $F_{ij}$        | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda_{max}, j \in \mathcal{B}_i$  |   | r |                   |                   |                   |   |
| $R_{ij}$        | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda_{max}, j \in \mathcal{B}_i$  |   |   |                   |                   |                   | r |
| $\tilde{F}_i$   | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda, \mathcal{B}_i$  |   | w | rw                | r                 |                   |   |
| $G_i$           | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda, \mathcal{B}_i$  |   |   |                   | w                 | rw                | r |
| $\mathcal{T}_i$ | $2(L_\lambda + 1) \times (L_\lambda + 1)$ | $\lambda, \mathcal{B}_i$  |   |   |                   | r                 |                   |   |
| $\mathcal{P}$   | $m \times m$ ??                           | $\mathcal{P}_\theta, \mathcal{P}_\phi$  |   |   | r                 |                   | r                 |   |