Errata for the thesis
Comparison of some domain decomposition methods

bs

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- p. 3, (2.9) "has a condition number".

- p. 5, (3.4) only "... inverses of the local ...".

- p. 5, (2.8) "preconditions the assembly".

- p. 15, the first unnumbered equation: using $S = S^T$,

$$E^T f - B^T \lambda \in \text{range}\, S = (\text{null}\, S)^\perp = (\text{range}\, Z)^\perp = \text{null}\, Z^T.$$

- p. 15, eq. (3.12), and similarly eq. (3.16),

$$a = \left(G^T Q G\right)^{-1} G^T Q (F\lambda - B S^+ E^T f).$$

- p. 15, eq. (3.13) should be

$$F\lambda - G\left(G^T Q G\right)^{-1} G^T Q(F\lambda - B S^+ f) = B S^+ f.$$

- p. 18, the equations of equilibrium should be written as

$$
\begin{aligned}
S_{rr}^{(i)} w_r^{(i)} &+& S_{rc}^{(i)} R_c^{(i)} w_c &+& B_r^{(i)T}\lambda &=& f_r^{(i)}, \\
\sum_{i=1}^{N} R_c^{(i)T} S_{rc}^{(i)T} w_r^{(i)} &+& \sum_{i=1}^{N} R_c^{(i)T} S_{cc}^{(i)} R_c^{(i)} w_c & & &=& f_c, \\
\sum_{i=1}^{N} B_r^{(i)} w_r^{(i)} & & & & &=& 0.
\end{aligned}
$$

- p. 19, Remark 3 "just the expanded".

- p. 20(-5) "From the definitions ... and R in (2.8)" should be replaced by "From the definitions ... and E in (2.2)".

- p. 24 the bound in (4.11) should be $\omega_{FETI-DP} = \|B_D^T B\|_{\widetilde{S}}^2$.

- p. 24 in the line following (4.11) "holds" can be replaced by "hold".

- p. 32 in Definition 20 "be call" should be replaced by "be called".

- p. 38 Remark 24: matrix $\mathcal{T}$ is not a particular case of T_E, the column of ones is missing. Nevertheless, the matrices are still closely related.

- p. 43, Remark 31 relates only to `lobpcg` (not the function `eig`).

- p. 44 The matrix Z_{ij} right above eq. (5.28) should be written as

$$Z_{ij} = \left[\begin{array}{cc} Z_i & 0 \\ 0 & Z_j \end{array} \right].$$

- p. 45, in eq. (5.33) the projections Π_{ij} are missing on the left-hand side, i.e., this equation should be correctly written as

$$\Pi_{ij} \left(I - R_{ij} E_{ij} \right)^T \widetilde{S}_{ij} \left(I - R_{ij} E_{ij} \right) \Pi_{ij} w_{ij} = \lambda_{ij} \left(\Pi_{ij} \widetilde{S}_{ij} \Pi_{ij} + t \left(I - \Pi_{ij} \right) \right) w_{ij}.$$