

<i>(x) Calculate equilibrium solution with regards to rigid body modes</i>	$\lambda_{\mathbf{N}0} = \mathbf{AG}(\mathbf{G}^T \mathbf{AG})^{-1} \mathbf{e}$
<i>(x) Projector to natural subspace</i>	$\mathbf{P} = \mathbf{I} - \mathbf{AG}(\mathbf{G}^T \mathbf{AG})^{-1} \mathbf{G}^T$
<i>(x) Calculate residual(gap) in natural subspace</i>	$\mathbf{r}_0 = \mathbf{P}^T (\mathbf{d} - \mathbf{F} \lambda_0)$
<i>(x) Calculate resulting forces for each substructure (preconditioning)</i>	$\mathbf{Z}_0 = \left[ \dots, \tilde{\mathbf{B}}^{(s)} \tilde{\mathbf{S}}^{(s)} \tilde{\mathbf{B}}^{(s)T} \mathbf{r}_0, \dots \right]$
<i>(x) Rigid body-components of forces</i>	$\mathbf{W}_0 = \mathbf{PZ}_0$
<i>(x) Initialize</i>	$\lambda_{\mathbf{F}0} = 0, i = 0$
<i>(x) While not converged</i>	$\sqrt{\mathbf{r}^T \mathbf{Z} \mathbf{I}} > \epsilon$
<i>(x) Compute gap-changes due to forces <math>\mathbf{W}_i</math></i>	$\mathbf{Q}_i = \mathbf{F} \mathbf{W}_i$
<i>(x) Energy of???</i>	$\Delta_i = \mathbf{Q}_i^T \mathbf{W}_i$
<i>(x) Energy of???</i>	$\gamma_i = \mathbf{Z}_i^T \mathbf{r}_i$
<i>(x) Step in new direction</i>	$\lambda_{\mathbf{F}i+1} = \lambda_{\mathbf{F}i} + \mathbf{W}_i \Delta_i^+ \gamma_i$
<i>(x) Gap change due to force step</i>	$\mathbf{r}_{i+1} = \mathbf{r}_i - \mathbf{P}^T \mathbf{Q}_i \Delta_i^+ \gamma_i$
<i>(x) Calculate resulting forces for each substructure (preconditioning)</i>	$\mathbf{Z}_{i+1} = \left[ \dots, \tilde{\mathbf{B}}^{(s)} \tilde{\mathbf{S}}^{(s)} \tilde{\mathbf{B}}^{(s)T} \mathbf{r}_{i+1}, \dots \right]$
<i>(x) Remove rigid body-components of forces</i>	$\mathbf{W}_{i+1} = \mathbf{PZ}_{i+1}$
<i>(x) Loop over previous iterations</i>	for: $0 \leq j \leq i$
<i>(x) Compute ??? factor</i>	$\phi_{i,j} = \mathbf{Q}_j^T \mathbf{W}_{i+1}$
<i>(x) Orthogonalize to direction j</i>	$\mathbf{W}_{i+1} \leftarrow \mathbf{W}_{i+1} - \mathbf{W}_j \Delta_j^+ \phi_{i,j}$
<i>(x) Increase iteration counter</i>	$i \leftarrow i + 1$
<i>(x) Compute total interface forces</i>	$\lambda = \lambda_{\mathbf{N}0} + \lambda_{\mathbf{F}0}$