$$
\begin{aligned}
\mathbf{S}\mathbf{L}_S &= \mathbf{L}_S \Lambda_S \\
\mathbf{S}^{-1/2} &\equiv \mathbf{L}_S \Lambda^{-1/2} \tilde{\mathbf{L}}_S \\
\mathbf{F}_0^{'} &\equiv \tilde{\mathbf{S}}^{-1/2} \mathbf{H}^{\text{core}} \mathbf{S}^{-1/2} \\
\mathbf{F}_0^{'} \mathbf{C}_0^{'} &= \mathbf{C}_0^{'} \epsilon_0 \\
\mathbf{C}_0 &= \mathbf{S}^{-1/2} \mathbf{C}_0^{'} \\
D_{\mu\nu}^0 &= \sum_m^{\text{occ}} (\mathbf{C}_0)_\mu^m (\mathbf{C}_0)_\nu^m \\
E_{\text{elec}}^0 &= \sum_{\mu\nu}^{\text{AO}} D_{\mu\nu}^0 (H_{\mu\nu}^{\text{core}} + F_{\mu\nu}) \\
&= \operatorname{tr}(\mathbf{D}(\mathbf{H}^{\text{core}} + \mathbf{F})) \\
E_{\text{total}}^0 &= E_{\text{elec}}^0 + E_{\text{nuc}} \\
\mathbf{F}_{'} &\equiv \tilde{\mathbf{S}}^{-1/2} \mathbf{F}^{\text{core}} \mathbf{S}^{-1/2} \\
\mathbf{F}^{'} \mathbf{C}^{'} &= \mathbf{C}^{'} \epsilon \\
\mathbf{C} &= \mathbf{S}^{-1/2} \mathbf{C}^{'} \\
E_{\text{elec}}^i &= \sum_{\mu\nu}^{\text{AO}} D_{\mu\nu} (H_{\mu\nu}^{\text{core}} + F_{\mu\nu}) \\
E_{\text{total}}^i &= E_{\text{elec}}^i + E_{\text{nuc}} \\
\Delta E &= E_{\text{elec}}^i - E_{\text{elec}}^{i-1} < \delta_1 \\
\text{rms}_D &= \left[\sum_{\mu\nu} (D_{\mu\nu}^i - D_{\mu\nu}^{i-1})^2 \right]^{1/2} < \delta_2 \\
\hat{F} \chi_i &= \epsilon_i \chi_i \\
(\mathbf{F})_{ij} &\equiv \epsilon_i \delta_{ij} = \langle \chi_j | \hat{F} | \chi_i \rangle \\
(\mathbf{F})_{ij} &= \sum_{\mu\nu} C_\mu^j C_\nu^i \langle \phi_\mu | \hat{F} | \phi_\nu \rangle = \sum_{\mu\nu} C_\mu^j C_\nu^i F_{\mu\nu} \\
\langle \vec{\mu} \rangle &= 2 \sum_{\mu\nu} D_{\mu\nu} \langle \phi_\mu | \vec{\mu} | \phi_\nu \rangle \\
q_A &= Z_A - 2 \sum_{\mu \in A} (\mathbf{D}\mathbf{S})_{\mu\mu}
\end{aligned}
$$