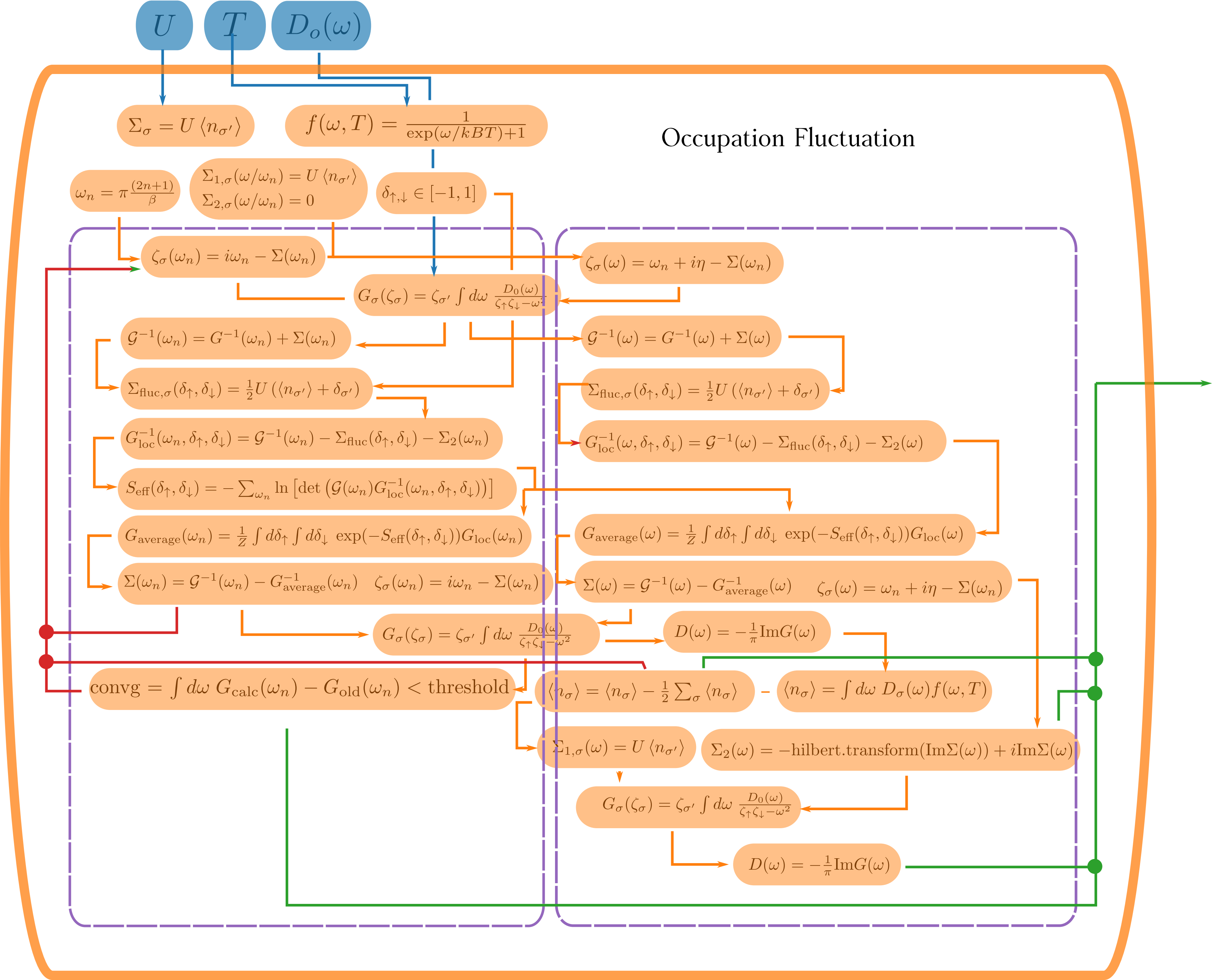

U
T
$D_o(\omega)$
Occupation Fluctuation
$\Sigma_\sigma = U\langle n_{\sigma'}\rangle$
$f(\omega,T) = \frac{1}{\exp(\omega/kBT)+1}$
$\omega_n = \pi\frac{(2n+1)}{\beta}$
$\Sigma_{1,\sigma}(\omega/\omega_n) = U\langle n_{\sigma'}\rangle$
$\Sigma_{2,\sigma}(\omega/\omega_n) = 0$
$\delta_{\uparrow,\downarrow} \in [-1,1]$
$\zeta_\sigma(\omega_n) = i\omega_n - \Sigma(\omega_n)$
$\zeta_\sigma(\omega) = \omega_n + i\eta - \Sigma(\omega_n)$
$G_\sigma(\zeta_\sigma) = \zeta_{\sigma'}\int d\omega\ \frac{D_0(\omega)}{\zeta_\uparrow\zeta_\downarrow-\omega^2}$
$\mathcal{G}^{-1}(\omega_n) = G^{-1}(\omega_n) + \Sigma(\omega_n)$
$\mathcal{G}^{-1}(\omega) = G^{-1}(\omega) + \Sigma(\omega)$
$\Sigma_{\mathrm{fluc},\sigma}(\delta_\uparrow,\delta_\downarrow) = \frac{1}{2}U(\langle n_{\sigma'}\rangle + \delta_{\sigma'})$
$\Sigma_{\mathrm{fluc},\sigma}(\delta_\uparrow,\delta_\downarrow) = \frac{1}{2}U(\langle n_{\sigma'}\rangle + \delta_{\sigma'})$
$G^{-1}_{\mathrm{loc}}(\omega_n,\delta_\uparrow,\delta_\downarrow) = \mathcal{G}^{-1}(\omega_n) - \Sigma_{\mathrm{fluc}}(\delta_\uparrow,\delta_\downarrow) - \Sigma_2(\omega_n)$
$G^{-1}_{\mathrm{loc}}(\omega,\delta_\uparrow,\delta_\downarrow) = \mathcal{G}^{-1}(\omega) - \Sigma_{\mathrm{fluc}}(\delta_\uparrow,\delta_\downarrow) - \Sigma_2(\omega)$
$S_{\mathrm{eff}}(\delta_\uparrow,\delta_\downarrow) = -\sum_{\omega_n}\ln\left[\det\left(\mathcal{G}(\omega_n)G^{-1}_{\mathrm{loc}}(\omega_n,\delta_\uparrow,\delta_\downarrow)\right)\right]$
$G_{\mathrm{average}}(\omega_n) = \frac{1}{Z}\int d\delta_\uparrow\int d\delta_\downarrow\ \exp(-S_{\mathrm{eff}}(\delta_\uparrow,\delta_\downarrow))G_{\mathrm{loc}}(\omega_n)$
$G_{\mathrm{average}}(\omega) = \frac{1}{Z}\int d\delta_\uparrow\int d\delta_\downarrow\ \exp(-S_{\mathrm{eff}}(\delta_\uparrow,\delta_\downarrow))G_{\mathrm{loc}}(\omega)$
$\Sigma(\omega_n) = \mathcal{G}^{-1}(\omega_n) - G^{-1}_{\mathrm{average}}(\omega_n) \quad \zeta_\sigma(\omega_n) = i\omega_n - \Sigma(\omega_n)$
$\Sigma(\omega) = \mathcal{G}^{-1}(\omega) - G^{-1}_{\mathrm{average}}(\omega) \quad \zeta_\sigma(\omega) = \omega_n + i\eta - \Sigma(\omega_n)$
$G_\sigma(\zeta_\sigma) = \zeta_{\sigma'}\int d\omega\ \frac{D_0(\omega)}{\zeta_\uparrow\zeta_\downarrow-\omega^2}$
$D(\omega) = -\frac{1}{\pi}\mathrm{Im}G(\omega)$
convg $= \int d\omega\ G_{\mathrm{calc}}(\omega_n) - G_{\mathrm{old}}(\omega_n) <$ threshold
$\langle n_\sigma\rangle = \langle n_\sigma\rangle - \frac{1}{2}\sum_\sigma\langle n_\sigma\rangle$
$\langle n_\sigma\rangle = \int d\omega\ D_\sigma(\omega)f(\omega,T)$
$\Sigma_{1,\sigma}(\omega) = U\langle n_{\sigma'}\rangle$
$\Sigma_2(\omega) = -$hilbert.transform$(\mathrm{Im}\Sigma(\omega)) + i\mathrm{Im}\Sigma(\omega)$
$G_\sigma(\zeta_\sigma) = \zeta_{\sigma'}\int d\omega\ \frac{D_0(\omega)}{\zeta_\uparrow\zeta_\downarrow-\omega^2}$
$D(\omega) = -\frac{1}{\pi}\mathrm{Im}G(\omega)$