

NCA again

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1 GO!

As funções de Green das pseudopartículas são

$$G_b(\omega) = \frac{1}{\omega - \lambda - \Sigma_b(\omega)}.$$

$$G_\sigma(\omega) = \frac{1}{\omega - \lambda - \epsilon_0 - \Sigma_\sigma(\omega)}.$$

$$G_a(\omega) = \frac{1}{\omega - \lambda - 2\epsilon_0 - U - \Sigma_a(\omega)}.$$

As auto-energias delas são

$$\Sigma_b(\omega) = \int_{-\infty}^{\infty} \frac{n_F(\epsilon) d\epsilon}{\pi} \left[\Delta_\sigma(\epsilon) G_\sigma(\epsilon + \omega) + \Delta_{\bar{\sigma}}(\epsilon) G_{\bar{\sigma}}(\epsilon + \omega) \right].$$

$$\Sigma_\sigma(\omega) = \int_{-\infty}^{\infty} \frac{n_F(\epsilon) d\epsilon}{\pi} \left[\Delta_\sigma(-\epsilon) G_b(\epsilon + \omega) + \Delta_{\bar{\sigma}}(\epsilon) G_a(\epsilon + \omega) \right].$$

$$\Sigma_a(\omega) = \int_{-\infty}^{\infty} \frac{n_F(\epsilon) d\epsilon}{\pi} \left[\Delta_\sigma(-\epsilon) G_{\bar{\sigma}}(\epsilon + \omega) + \Delta_{\bar{\sigma}}(-\epsilon) G_\sigma(\epsilon + \omega) \right].$$

A função espectral da impureza é

$$\rho_\sigma(\omega) = -\frac{\text{Im}\{K_\sigma(\omega)\}}{\pi} = \frac{\int_{-\infty}^{\infty} d\epsilon e^{-\beta\epsilon} \left[A_b(\epsilon) A_\sigma(\epsilon + \omega) + A_{\bar{\sigma}}(\epsilon) A_a(\epsilon + \omega) \right]}{\int_{-\infty}^{\infty} d\epsilon e^{-\beta\epsilon} \left[A_b(\epsilon) + A_\sigma(\epsilon) + A_{\bar{\sigma}}(\epsilon) + A_a(\epsilon) \right]}.$$