

In the Bethe lattice case, the self consistency condition is simply (see <https://triqs.github.io/cthyb/latest/guide/dmft.html> and [https://triqs.github.io/triqs/latest/userguide/python/dmft\\_one\\_page.html](https://triqs.github.io/triqs/latest/userguide/python/dmft_one_page.html))

$$G_0^{-1}(i\omega_n) = i\omega_n + \mu - t^2 G(i\omega_n), \quad (1)$$

where  $2t$  is the half bandwidth and  $t=0.5$ . This means the hybridization function is simply

$$\Delta(i\omega_n) = t^2 G(i\omega_n). \quad (2)$$

The DMFT procedures are following:

1. At the initial time, set  $J(\varepsilon) = \frac{1}{2\pi t} \sqrt{1 - (\varepsilon / 2t)^2}$  and we have

$$\Delta(i\omega_n) = \int_{-2t}^{2t} \frac{J(\varepsilon)}{i\omega_n - \varepsilon} d\varepsilon. \quad (3)$$

2. Compute  $G(i\omega_n)$ , and set new  $\Delta(i\omega_n) = t^2 G(i\omega_n)$

The number of mesh points for  $i\omega_s$  is totally 2050 for both positive and negative parts, and number of mesh points for  $\tau$  is 10001.