Sparse sampling points in imaginary time  $G(\bar{\tau}_{k}^{\mathrm{F}}), \Sigma(\bar{\tau}_{k}^{\mathrm{F}}), P(\bar{\tau}_{k}^{\mathrm{B}}), W(\bar{\tau}_{k}^{\mathrm{B}})$  $\mathbf{F}_{\alpha}$   $\mathbf{F}_{\alpha}^{+}$ IR basis  $G_l, \Sigma_l, P_l, W_l$ Arbitrary imaginary

$$\hat{\mathbf{F}}_{\alpha} \downarrow \hat{\mathbf{F}}_{\alpha}^{+}$$
 time/frequency

Sparse sampling points in imaginary frequency,

 $G(i\bar{\omega}_k^{\mathrm{F}}), \Sigma(i\bar{\omega}_k^{\mathrm{F}}), P(i\bar{\omega}_k^{\mathrm{B}}), W(i\bar{\omega}_k^{\mathrm{B}})$