Absorption spectra of model J and H aggregate

In the following Figures we present absorption spectra of vibronic model J and H aggregates in an open and closed chain configuration, computed with an increasing depth, $M$, of the mD$_2$ Ansatz. Aggregate consists of 10 sites with 1 vibrational mode, of frequency $\omega = 500$ cm$^{-1}$, per site. Mode Huang-Rhys factor is set to $S = 1$. We vary the nearest neighbor coupling $J$ from 0 cm$^{-1}$ to $\pm 1000$ cm$^{-1}$ with step size of $\pm 250$ cm$^{-1}$. Vibrational mode thermal energy $k_B T$ is changed from 250 cm$^{-1}$ to 1000 cm$^{-1}$ with step of 250 cm$^{-1}$.

Figure 1. Absorption spectra of model J aggregate in an open chain configuration, computed with mD$_2$ Ansatz depth $M$, nearest neighbor coupling $J$ and vibrational mode thermal energy $k_B T$. 
Figure 2. Absorption spectra of model J aggregate in an closed chain configuration, computed with mD$_2$ Ansatz depth $M$, nearest neighbor coupling $J$ and vibrational mode thermal energy $k_B T$. 
Figure 3. Absorption spectra of model H aggregate in an open chain configuration, computed with mD$_2$ Ansatz depth $M$, nearest neighbor coupling $J$ and vibrational mode thermal energy $k_B T$. 
Figure 4. Absorption spectra of model H aggregate in an closed chain configuration, computed with mD$_2$ Ansatz depth $M$, nearest neighbor coupling $J$ and vibrational mode thermal energy $k_BT$. 