Linear and non-linear spectroscopy of quantum aggregates

We present time-dependent quantum calculations describing the spectroscopy of molecular aggregates. In a first example, we compare absorption and circular dichroism (CD) spectra of merocyanine dimers and show which information can be gained from a time-dependent approach to CD spectroscopy [1]. We then discuss 2d-vibronic spectra of dimers of perylenebisimide dyes and in particular their dependence on the dimer geometry [2]. As an outlook, the vibronic dynamics in larger molecular oligomers is discussed [3].

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