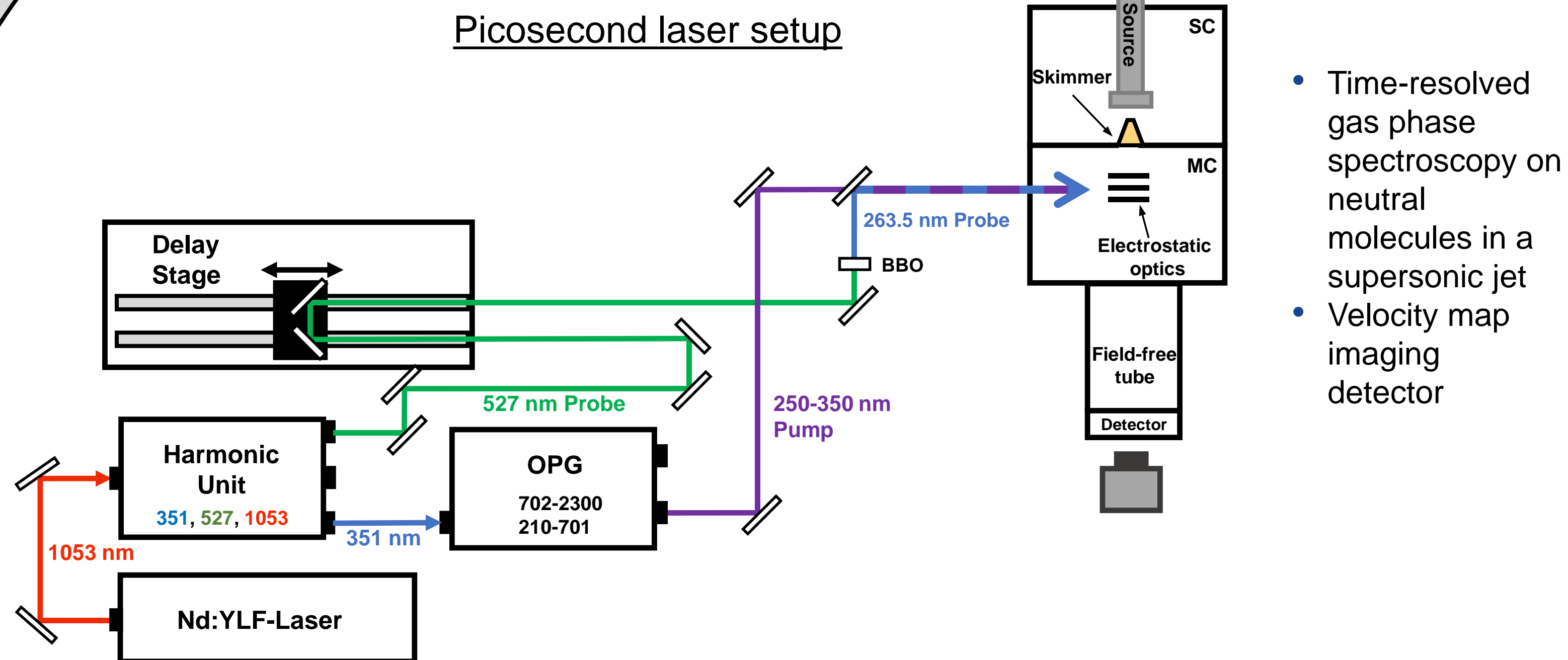
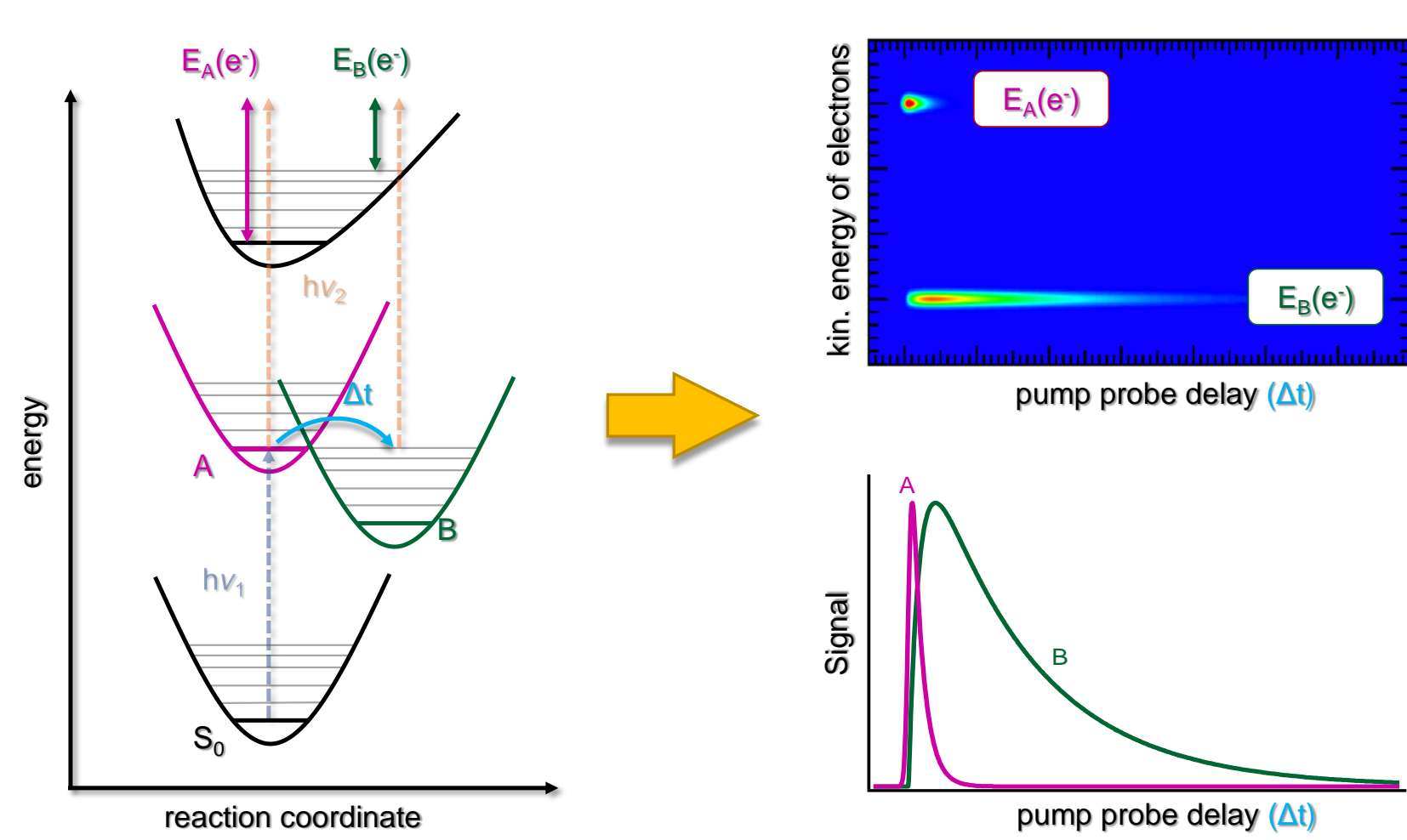


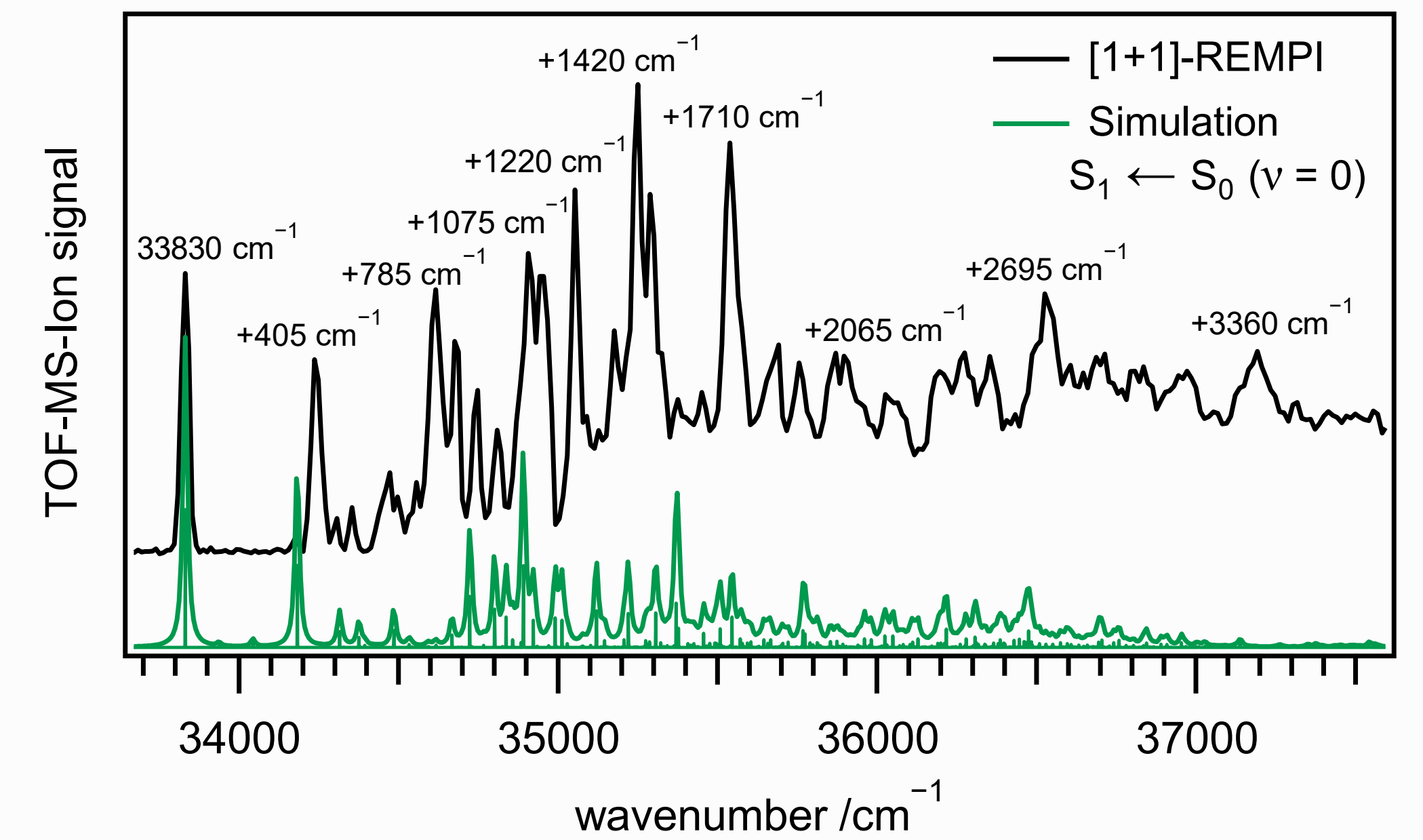
Experimental Methods



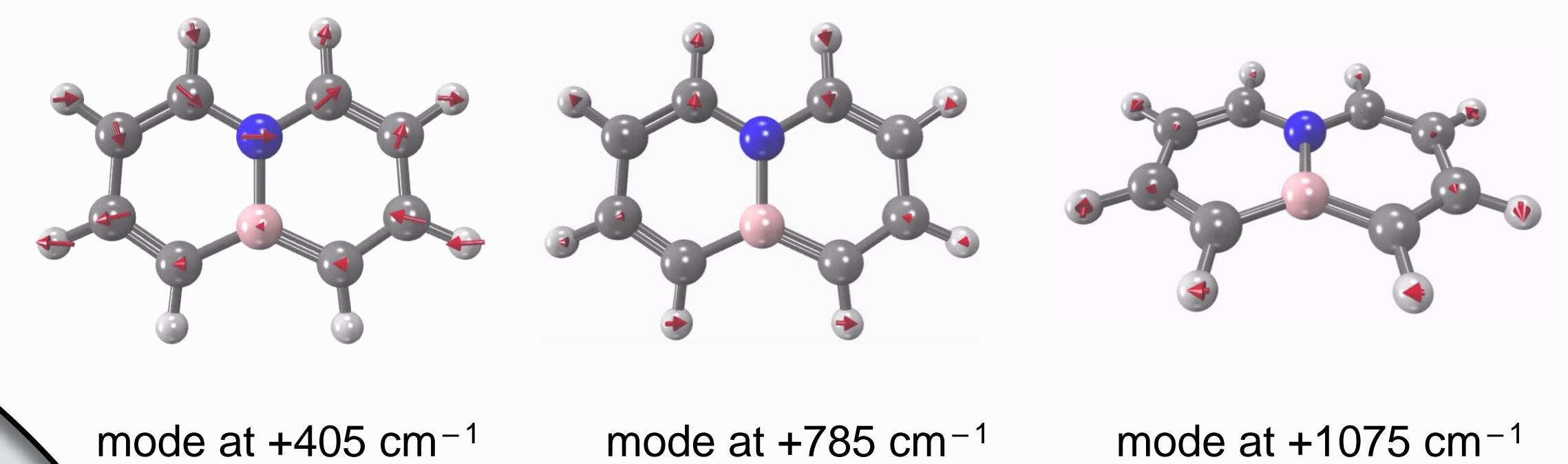
Time-resolved VMI (velocity map imaging)



REMPI

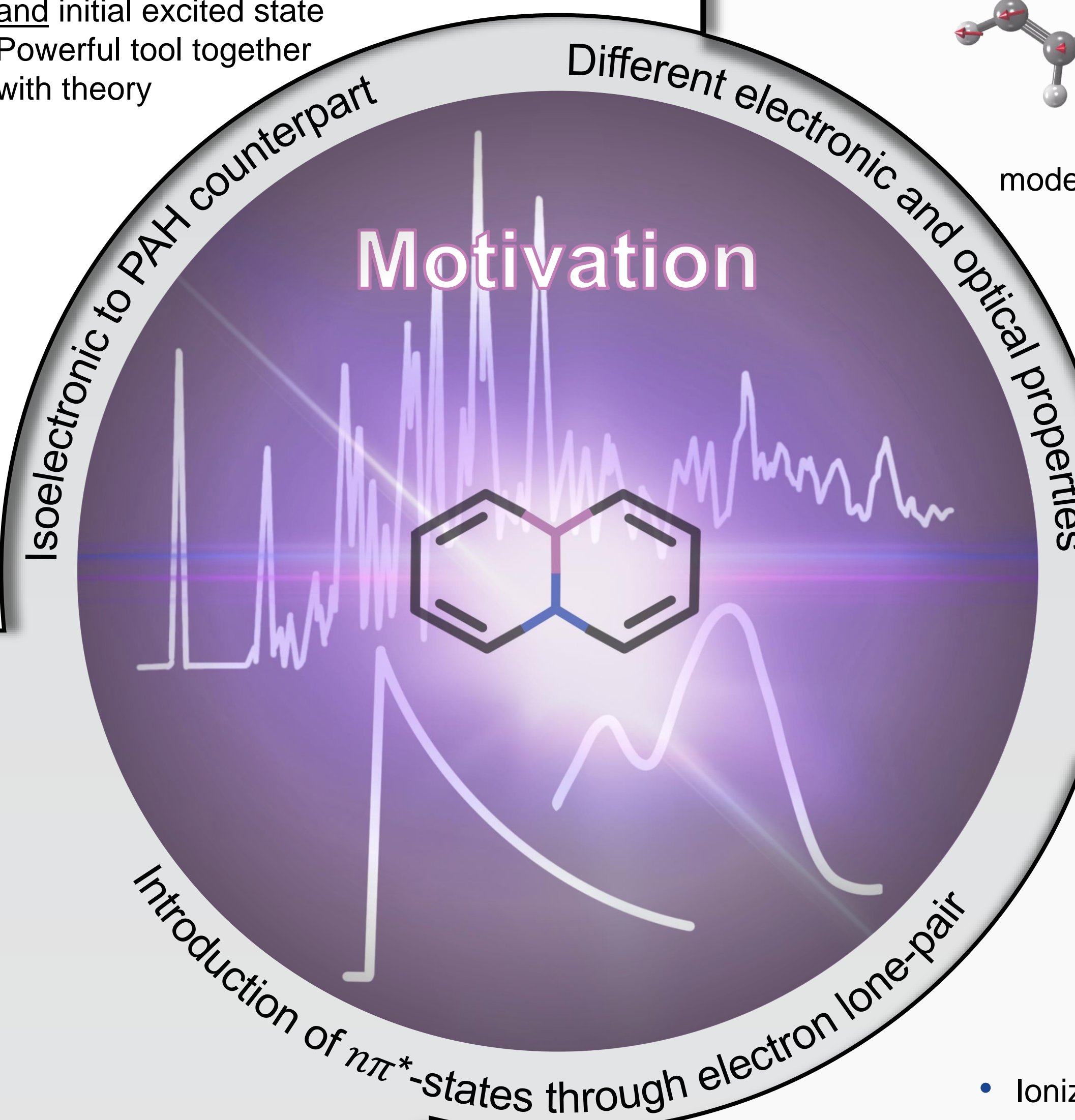
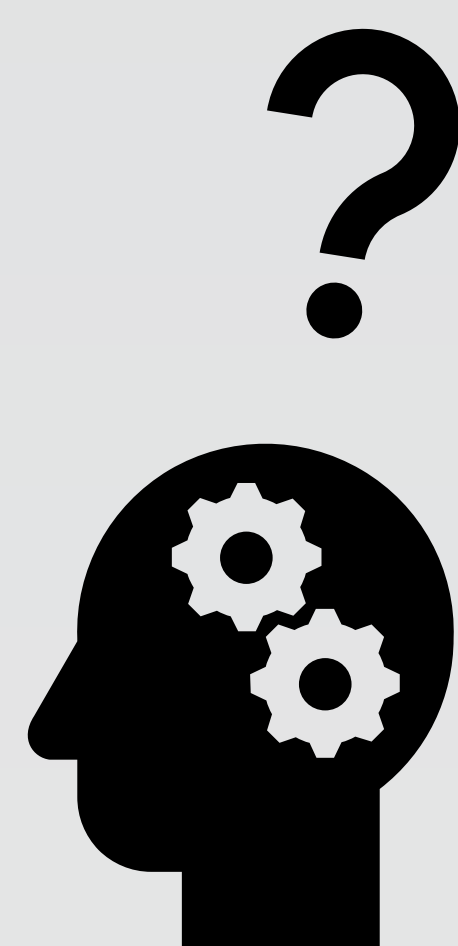
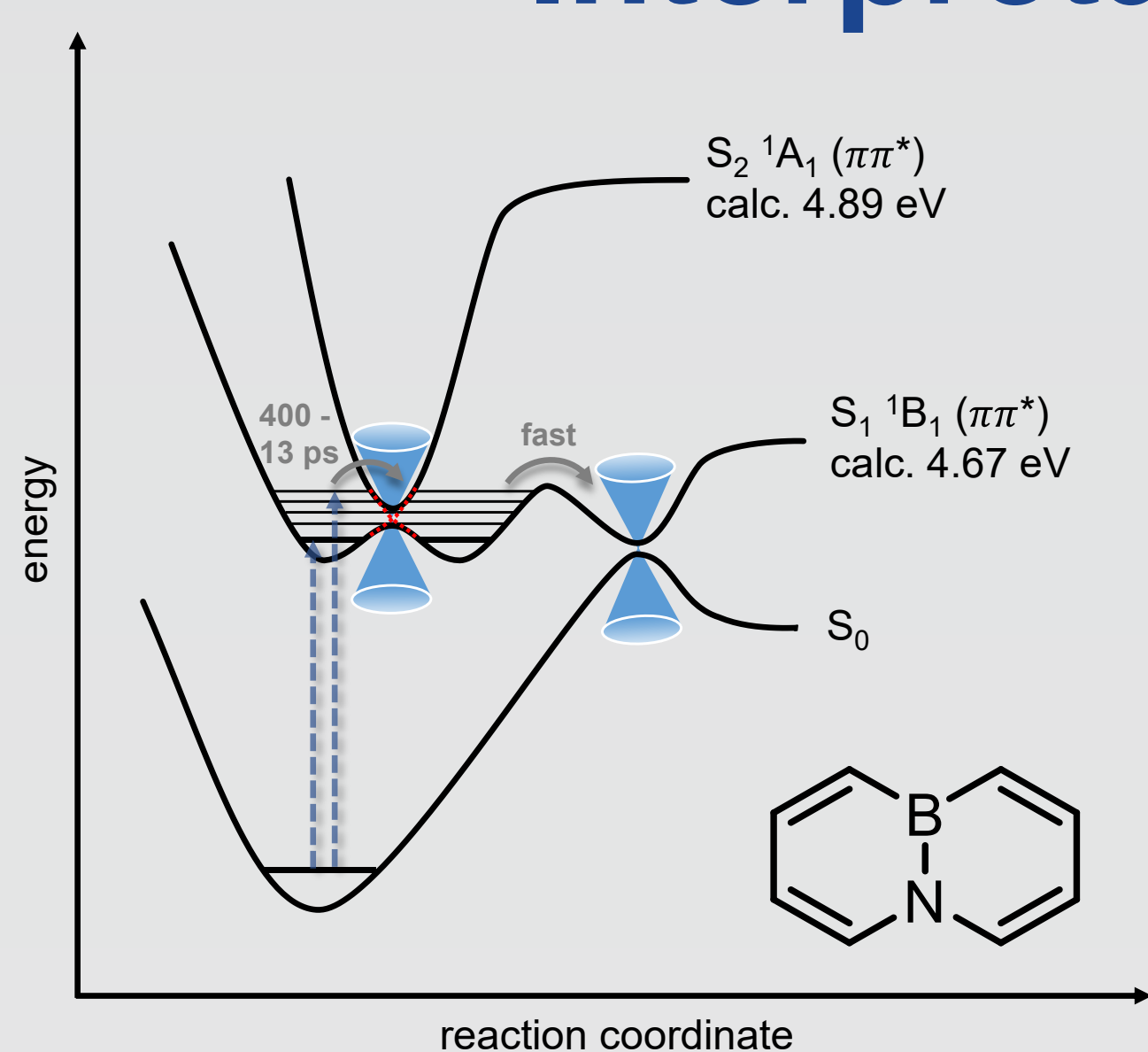


Most intense in-plane ring deformation vibrations of the REMPI spectrum



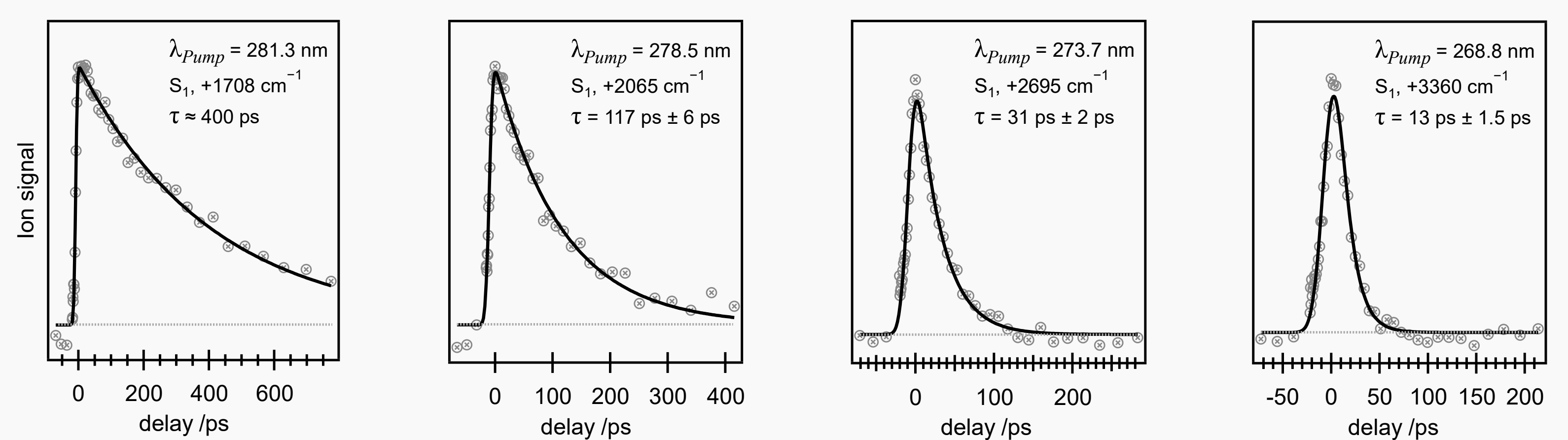
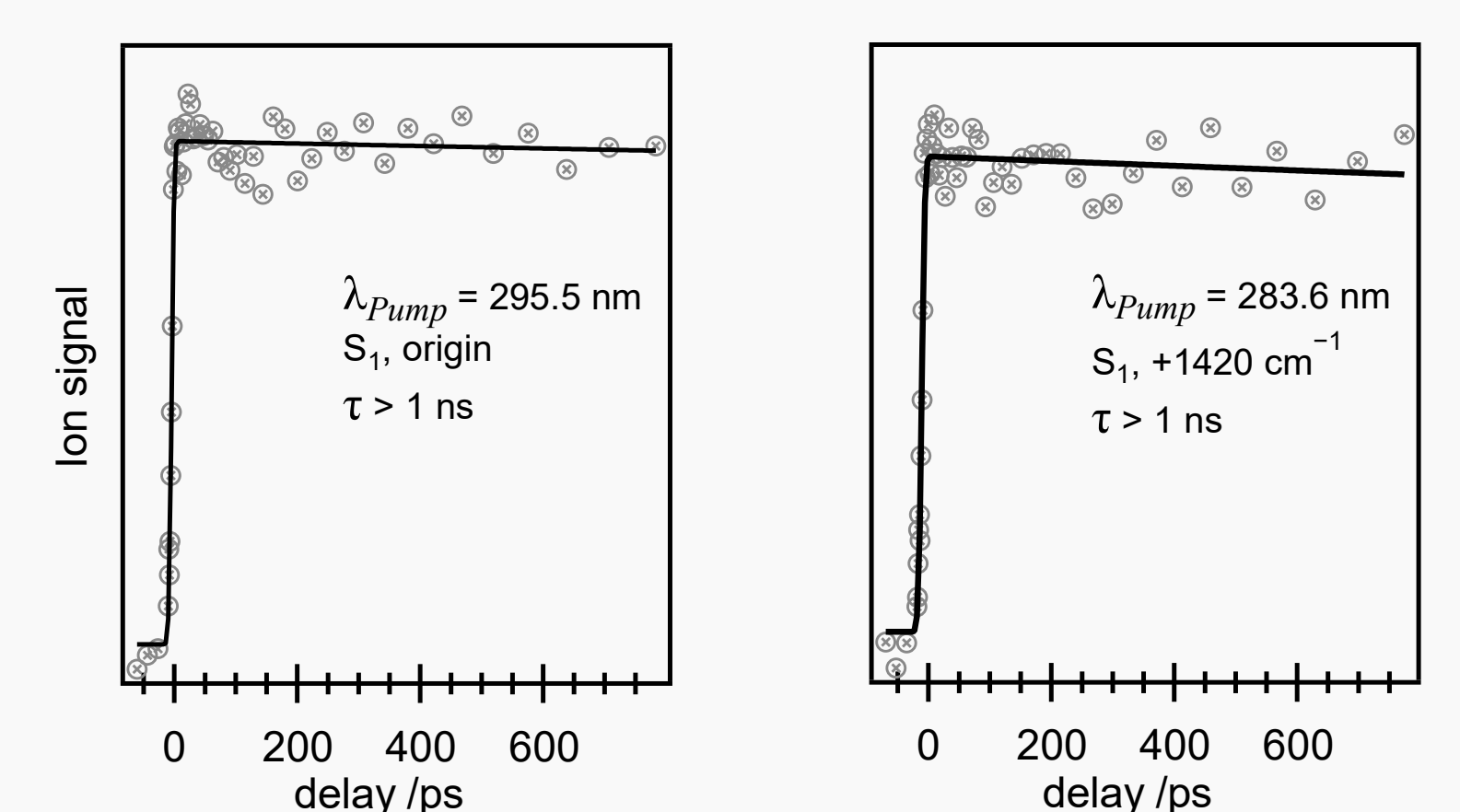
- One-colour REMPI with ω B97XD and aug-cc-pVTZ DFT simulation of S_0 to S_1 state
- S_1 origin at $\tilde{\nu} = 33830 \pm 12 \text{ cm}^{-1}$ (4.20 eV)
- Intense peaks of spectrum mainly from in-plane ring deformation vibrations
- First bands well separated, higher energy bands appear on top of a background signal

Interpretation



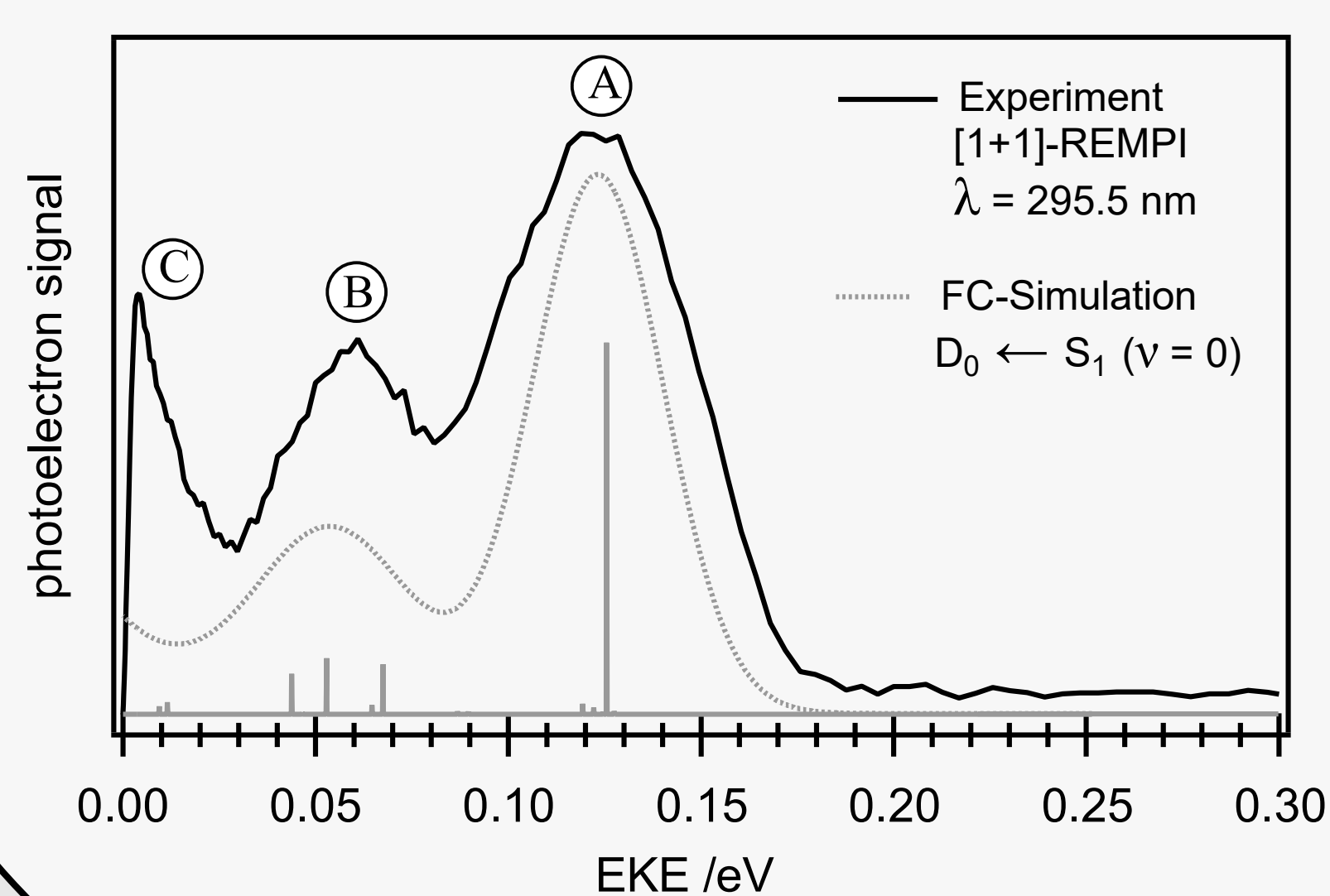
Time-resolved spectra

- Ionization with 263.5 nm
- Long-lived low-energy vibrational modes
- Typical for S_1 -state which usually undergoes slow deactivation processes like fluorescence or intersystem crossing



- Dynamics depend strongly on excitation energy → with higher excitation energy all time constants decrease monoexponentially to zero
- First time constant is observable at 1708 cm^{-1} (0.21 eV) above S_1 origin

Photoelectron spectrum



- Experimental ionization: $IE_{ad} = 8.27 \pm 0.025 \text{ eV}$
- Franck-Condon simulation: TD-DFT on the ω B97XD and aug-cc-pVTZ level of theory

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