Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary information

Femtosecond mid-infrared study of the dynamics of water in aqueous sugar solutions

C.C.M. Groot and H.J. Bakker

This supplement contains several figures that illustrate observations stated in the main article.

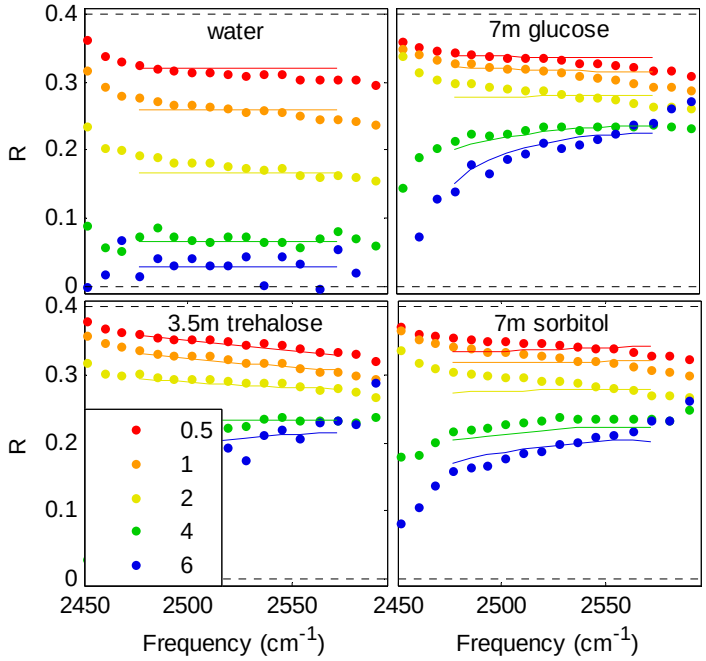

Fig. 1: ***Anisotropic absorption signals*** *for solutions of glucose, trehalose and sorbitol in isotopically diluted water, at five different picosecond delay times after the excitation. The concentrations are given in molal (mol/kg). The solid lines represent fits using the model described in the main text.*

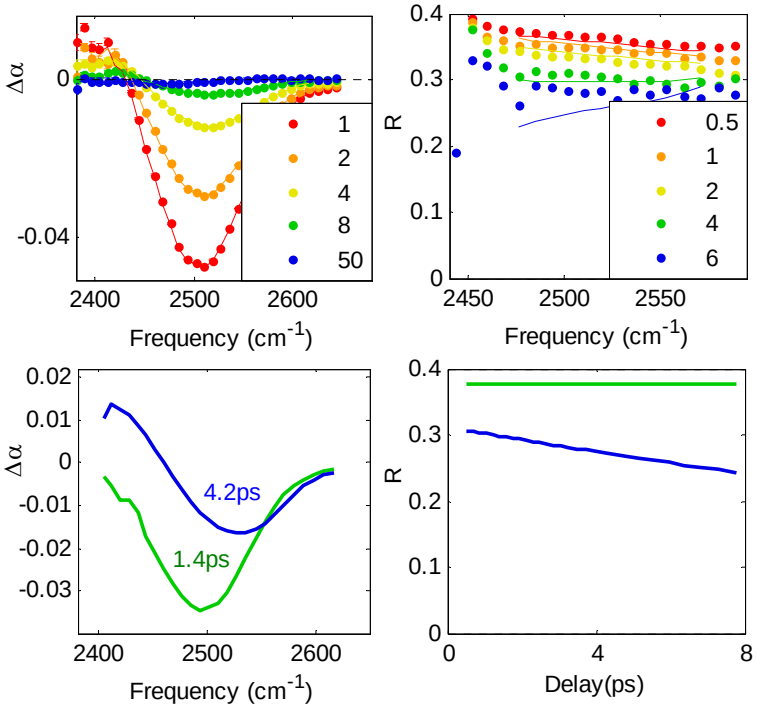

Fig. 2: a: The isotropic absorption change and b: the anisotropic absorption change as a function of frequency for ***0.4 molal 10% deuterated sorbitol in DMSO*** *(solid lines are description with model fit). c: Spectral components contributing to isotropic signal (relative amplitudes correspond to 1 ps), d: Anisotropy of the two spectral components as a function of delay time.*

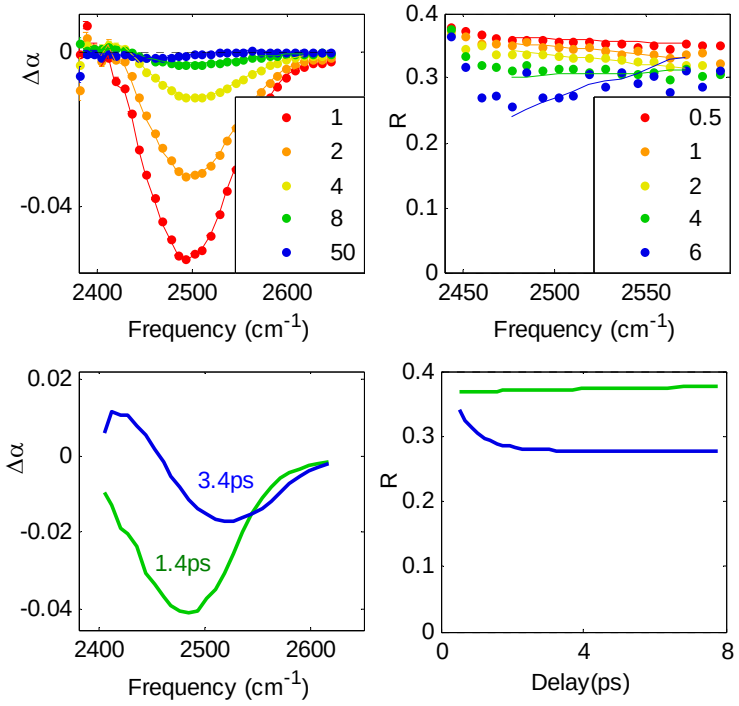

*Fig. 3: a: The isotropic absorption change and b: the anisotropic absorption change as a function of frequency for **0.4 molal 10% deuterated glucose in DMSO** (solid lines are description with model fit). c: Spectral components contributing to isotropic signal (relative amplitudes correspond to 1 ps), d: Anisotropy of the two spectral components as a function of delay time.*

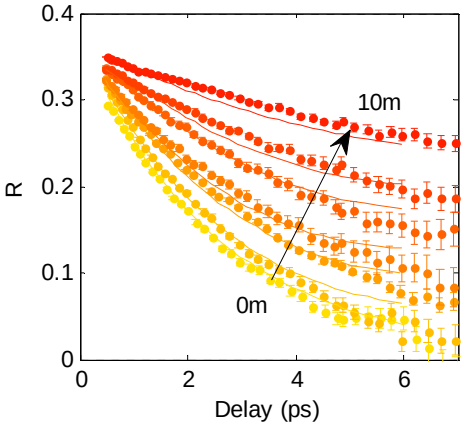

*Fig. 4: Anisotropic absorption signal at 2500 cm^{-1} for solutions of **glucose in water** of different concentrations (0, 1, 2, 3, 5, 7 and 10 molal). Solid lines are description with our model fit.*

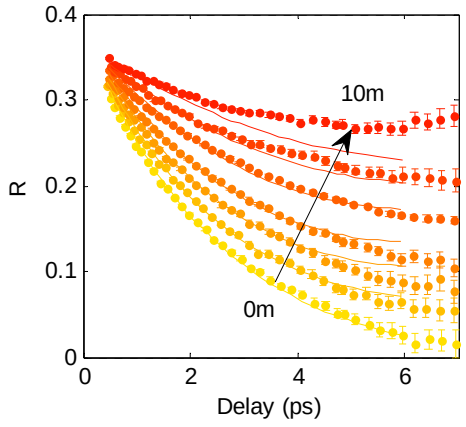

*Fig. 5: Anisotropic absorption signal at 2550 cm^{-1} for solutions of sorbitol **in water** of different concentrations (0, 1, 2, 3, 5, 7 and 10 molal). Solid lines are description with our model fit.*