THz Spectroscopy:  
A novel experimental tool to study water network dynamics  
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In recent years a new frequency window has been opened: The THz range. We could demonstrate that precise THz absorption measurements is a new tool to directly study the solvation dynamics of biomolecules\(^1\). THz absorption spectroscopy probes sensitively the fast (sub-psec) collective network dynamics of bulk water. Accompanying \textit{ab initio} MD simulation unravel the underlying molecular motions: In contrast to the mid infrared regime - where the absorption peaks can be assigned to intramolecular motions - in the frequency regime below 1000 cm\(^{-1}\) intermolecular motions with concerted particle motions dictate the spectrum\(^2\). Precise measurements of absorption coefficients of solvated solutes in the THz regime allow now a detailed view on the role of the water for biological function\(^3,4,5\).

References