Femtosecond study of self-trapped vibrational excitons in crystalline acetanilide - DTU Orbit
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**Femtosecond study of self-trapped vibrational excitons in crystalline acetanilide**

Femtosecond IR spectroscopy of delocalized NH excitations of crystalline acetanilide confirms that self-trapping in hydrogen-bonded peptide units exists and does stabilize the excitation. Two phonons with frequencies of 48 and 76 cm\(^{-1}\) are identified as the major degrees of freedom that mediate self-trapping. After selective excitation of the free exciton, self-trapping occurs within a few 100 fs. Excitation of the self-trapped states disappears from the spectral window of this investigation on a 1 ps time scale, followed by a slow ground state recovery of the hot ground state within 18 ps.

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- **Contributors:** Edler, J., Hamm, P., Scott, A. C.
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