SOLVENT INFLUENCE ON THE ABSORPTION SPECTRA OF H - BONDED COMPLEXES

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The absorption spectra of Xe...HF, $(CH_3)_2O$...HF and $CF_3CH_2OH$...$O(CH_3)_2$ hydrogen bonded complexes were studied and the main regularities of the solvent influence on the band were analysed. It was shown that the complex bands become more symmetric and shift toward lower frequencies with increasing density on transition from the gas to liquid phase. The band structure due to low-frequency vibrations in typical H - bonded complexes does not change on transition to inert solvents.

It was shown that at transition from gas to liquid, with the increasing of system density the bands of complexes are symmetryzated and displace to the low frequencies. In case of FH the spectrum of complex B...HF is imposed with vibration-rotational band of free molecules HF. By subtraction the absorbtion bands of complex HF. Since the complex bands have a complicated shape then as the characteristics of bands were used a normalised spectral moments, which are calculated from experimental spectra. At small densities of xenone the band of complexes has asimmetric shape. With the increasing of the density at first disappears the structure and band shifts to the low frequencies, and at further increasing of density the band is symmetryzated. In liquid Xe is observed the enough wide and practical symmetric band of Xe...HF complex. In $CF_3CH_2OH$...$O(CH_3)_2$ complex, H 6 kcal/mol vibration - rotational band OH in gas is formed as result of superposition of combinational and hot transitions with participation of low-frequency intermolecular vibrations. Already in gas state the OH band has simple practically symmetric shape and solvent influence is displayed fist of all in the increasing of low-frequency shift of band as compared with gas state.