ROTATIONAL SPECTRA, STRUCTURES AND MODELING OF THE SO_2–OCS, SO_2–CS_2 AND SO_2–CO_2 COMPLEXES

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The rotational spectra of the SO_2–OCS and SO_2–CS_2 weakly bound dimers have been assigned by pulsed-nozzle Fourier-transform microwave spectroscopy. Both complexes have C_S symmetry with the SO_2 straddling the linear monomer. The SO_2 axis makes an angle with the linear monomer of 18.3° and 9.8° respectively in the two complexes. This is in contrast to the structure of SO_2–CO_2.[a] This complex has effective C_{2v} symmetry with the SO_2 axis perpendicular to the CO_2. The structural features and dipole moments of these three species will be discussed and compared with results obtained from a semi-empirical model employing electrostatic, dispersion and repulsion interactions.

[a] L.H. Sun, I.I. Ioannou and R.L. Kuczkowski, *Mol. Phys.*, **88**, (1996), 255