ROTATIONAL SPECTRA, STRUCTURES AND MODELING OF THE SO₂–OCS, SO₂–CS₂ AND SO₂–CO₂ COMPLEXES

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The rotational spectra of the SO₂–OCS and SO₂–CS₂ weakly bound dimers have been assigned by pulsed-nozzle Fourier-transform microwave spectroscopy. Both complexes have $C_5v$ symmetry with the SO₂ straddling the linear monomer. The SO₂ axis makes an angle with the linear monomer of 18.3° and 98.8° respectively in the two complexes. This is in contrast to the structure of SO₂–CO₂. This complex has effective $C_{2v}$ symmetry with the SO₂ axis perpendicular to the CO₂. 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.