

ROTATIONAL SPECTROSCOPY OF OCS–N₂O

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The rotational spectrum of OCS–N₂O has been recorded in the 7 - 18 GHz region using a pulsed molecular beam, Fourier transform microwave spectrometer. Both *a*- and *b*-type transitions are observed, and the hyperfine structure due to the two quadrupolar ¹⁴N nuclei have been analyzed using the Watson A-reduced Hamiltonian with the inclusion of hyperfine interactions. The spectroscopic constants are consistent with a planar structure with the centers of mass of the two subunits separated by 3.52 Å. The OCS subunit is approximately perpendicular to the intermolecular axis while the N₂O subunit forms an angle of about 56° with the intermolecular axis.