THE FOURIER TRANSFORM SPECTRUM OF B - X BAND SYSTEM OF ALO

M. D. SAKSENA, A-10 Basera, Off-Din Quarry Road, Deonar, Mumbai 400 088, India; S. H. BEHERE, C.T. LONDHE, Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India; K. SUNANDA, Spectroscopy Division, Bhabha Atomic Research Centre, Trombay, Mumbai 400 085, India; M. N. DEO, High Pressure Division, Bhabha Atomic Research Centre, Trombay, Mumbai 400 085, India.

The spectrum of B - X system of AlO has been recorded on BOMEM DA8 F. T. spectrometer at an apodized resolution of 0.05 cm⁻¹. Nineteen bands of the \( \Delta v = 1, 0, -1 \) and -2 sequences of this system have been analyzed for the rotational structure, out of which seven bands, viz. 3-2, 4-3, 2-3, 3-4, 4-5, 5-6 and 6-7 have been analyzed for the first time. The rotational lines of these bands along with earlier analyzed bands, a total of 7200 lines have been fitted in a simultaneous least squares fit. The study has resulted in determining more precise vibrational and rotational constants of the two states. Because of the high resolution employed it became necessary to invoke \( H_0 \) and \( H_1 \) coefficients, and a fifth order term to explain the anomalous spin-doubling observed in the \( v'' = 5, 6 \) and 7 levels of the \( X^2\Sigma^+ \) state.