

LASER SPECTROSCOPY OF THE $B^1\Pi_u \leftarrow X^1\Sigma_g^+$ SYSTEM OF Cs_2 IN THE 12700–13150 cm^{-1} REGION

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The electronic vib-rotational transitions of the $B^1\Pi_u - X^1\Sigma_g^+$ system have been observed and assigned by U. Diemer *et al.*(1). In the present work, we report the assignments of 5000 lines and the improved spectroscopic constants. The Doppler limited P , Q and R – branch absorption lines of $J = 20$ to 270 belonging to the $v' \leftarrow v'' = (0 \sim 5) \leftarrow (0 \sim 11)$ progressions were measured in the 12700–13150 cm^{-1} region using a Ti:sapphire ring laser (Coherent 899-21). The $v' \leftarrow v'' = 1 \leftarrow 4$, $1 \leftarrow 5$ and $2 \leftarrow 6$ bands were measured using a technique of polarization spectroscopy. The wavelength measurements were done using a wavelength-meter (Anritu MF9630A) with an accuracy of ± 0.5 ppm, which was calibrated against the two photon signal of Rb at 788 nm (2). The Dunham's coefficients of the $Y_{l,m}'$ ($l = 0 \sim 4$, $m = 0 \sim 4$) of the B –state were determined by a global least squares fitting by using the constants of the X –state reported by W. Weickenmeier *et al.*(3).

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(3) W. WEICKENMEIER, U. DIEMER, M. WAHL, M. RAAB, W. DEMTRÖDER AND W. MÜLLER, *J. Chem. Phys.* **82**, 5354–5363 (1985).