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 $\pm$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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