HIGH – RESOLUTION LASER SPECTROSCOPY OF THE $A^3\Pi_1 \leftarrow X^1\Sigma^+$ SYSTEM OF ICl IN 0.8 μm REGION.

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The doppler limited electronic vib–rotational absorption spectrum of $A^3\Pi_1 \leftarrow X^1\Sigma^+$ system in $I^{35/37}Cl$ is measured in the 11300 – 13200 cm^{-1} region using a Ti:Sapphire Ring Laser (Coherent 899-21). The 56 bands belonging to $(v' = 0 \sim 7) \leftarrow (v'' = 0 \sim 6)$ in $I^{35/37}Cl$ are assigned. The Dunham coefficients of the $X^1\Sigma^+$ state are calculated based on a global reduced least squares fitting procedure. The Y''_{10} and Y''_{01} reported by Hedderich *et al.*[a] are taken into the calculation because we do not have sufficient spectrum belonging to v''= 0 $\sim$ 2. In the $A^3\Pi_1$ state, the T'_v, $B'_{v\,e/f}$, D'_v and H'_v are determined instead of the Dunham coefficients to avoid the distortion of the potential. To investigate the accuracy of Dunham coefficients determined in the $X^1\Sigma^+$ state, the absorption lines of $4' \leftarrow 0''$ and $5' \leftarrow 0''$ bands are assigned in the 14438 – 14491 cm^{-1} region where measurements are performed intermittently. Those lines are well positioned within the limit of the standard deviation.

[a] H. G. Hedderich and P. F. Bernath, *J. Mol. Spectrosc.* **155**,384–392(1992)