HIGH-RESOLUTION LASER SPECTROSCOPY OF $A^3\Pi_{1u} \leftarrow X^1\Sigma_g^+$ SYSTEM OF I_2

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The molecular constants for the A-state of I_2 calculated by the NDE method have been reported by D.R.T.Appadoo *et al.*[1] Yukiya *et al.* measured the Q-branch lines up to $v' = 45$ using a titanium sapphire ring laser, where the hyperfine components were partially resolved at the higher vibrational bands than those of $v' = 35$, and determined the spectroscopic constants.[2] In this work we report the line splittings of the P and R-branches caused by the nuclear quadrupole coupling effect. The 23 bands of $(v' = 15-19) \leftarrow (v'' = 3)$, $(v' = 18-30) \leftarrow (v'' = 4)$, and $(v' = 25-29) \leftarrow (v'' = 5)$ were newly assigned. The unperturbed line positions were obtained using the high J approximation.

The spectroscopic constants of T_v, B_{vf}, D_v, H_v, and q_v of the A-state determined by the aid of the Dunham parameters of the X-state[3] will be presented.

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