EXPERIMENTAL STUDY OF THE Cs_2 TRIPLET STATES BY PERTURBATION FACILITATED INFRARED-INFRARED DOUBLE RESONANCE AND TWO-PHOTON EXCITATION SPECTROSCOPY

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Fifty $3^3\Sigma_g^+$ $v= 2-9 \leftarrow X^1\Sigma_g^+$ two-photon transitions of Cs_2 have been observed in the infrared wavelength. Vibrational resolved fluorescence into both bound levels and the continuum of the $a^3\Sigma_u^+$ state has been recorded with monochromator. Calculated $3^3\Sigma_g^+ \rightarrow a^3\Sigma_u^+$ fluorescence spectra are compared with observed spectra.

With two infrared diode lasers,totally 43 ro-vibrational levels of the Cs_2 $3^3\Pi_g$ state have been observed by perturbation facilitated infrared-infrared double resonance spectroscopy. Rotationally resolved fluorescence to the $a^3\Sigma_u^+$ state was also recorded.