LASER EXCITATION SPECTRA AND FRANK-CONDON FACTORS FOR Bi_2 $X^1\Sigma_g^+ \rightarrow A0_u^+$

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Laser excitation spectra of the lowest vibrational levels, v"=2-5 and v'=0-4, for the Bi_2 $X^1\Sigma_g^+ \rightarrow A(0_u^+)$ system have been recorded for a wide range of rotational levels, $0 < J < 211$, at Doppler-limited resolution of 0.013 cm^{-1}. New rotational term values and spectroscopic constants are reported, improving the accuracy of predicted line positions for high rotational levels by as much as 0.8 cm^{-1}. In addition, Frank-Condon factors are computed and compared with experimental observations from CW laser-induced fluorescence spectra.