

ROTATIONAL ANALYSIS OF THE  $A^2\Pi - X^2\Sigma^+$  AND  $B^2\Sigma^+ - X^2\Sigma^+$  TRANSITIONS OF YbBr USING LASER EXCITATION AND RESOLVED FLUORESCENCE

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High-resolution laser excitation spectra have been recorded for the first time for YbBr. Data for the 0-0 and 1-0 bands of the  $A^2\Pi - X^2\Sigma^+$  system and the 0-0, 1-0 and 1-1 bands of the  $B^2\Sigma^+ - X^2\Sigma^+$  system were obtained using selective detection of fluorescence. The lowest vibrational levels of the  $A^2\Pi_{3/2}$  and  $B^2\Sigma^+$  states are shown to be separated by  $\approx 400 \text{ cm}^{-1}$ , and exhibit the characteristics of a mutually perturbing pair. Through observation of symmetry forbidden transitions in the  $B^2\Sigma^+ - X^2\Sigma^+$  system, mixing of the  $A$  and  $B$  states is apparent. A resolved fluorescence study has also been undertaken by observing the 0-1, 0-2 and 0-3 bands in the  $A^2\Pi_{1/2} - X^2\Sigma^+$  system. A least-squares merged fit of the estimated parameters from individual bands was performed to remove redundancies, the results of which will be presented.