LASER-INDUCED FLUORESCENCE IN KLi

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Laser-induced fluorescence spectra of the $B \rightarrow X$ system of the potassium-lithium molecule have been recorded on a Fourier transform interferometer. The molecules were excited with a tuneable, single-mode cw dye laser operating with Rhodamine 110 or Coumarine 6 dye, and the spectra recorded in the range 12500 - 18500 cm^{-1} at a resolution of 0.05 cm^{-1}. Vibrational levels up to v = 46 are observed for the main isotopomer, ^{39}K^{7}Li.

Ground state energies have been fitted to a Dunham polynomial expansion, and also directly to a pointwise potential curve. Both approaches fit the data with a root-mean-square error of 0.005 cm^{-1}. The data define the ground state potential curve accurately out to about 7 Å. The dissociation energy of the ground state D$_e$ is estimated to be D$_e$ = 6216 $\pm$ 2 cm^{-1}, and the highest vibrational level v_{max} = 50 for the main isotopomer.

Very weak transitions around 12600 cm^{-1} are tentatively assigned as bands of the 2 $^3\Sigma^+ \rightarrow$ 1 $^3\Sigma^+$ transition, observed as collisionally induced fluorescence.