ν_{18} SPECTRAL REGION OF $^{10}B^{11}BH_6$: OBSERVATION OF THE DARK STATE $\nu_5+\nu_{10}$

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Using high resolution Fourier transform spectra, a thorough analysis of the ν_{14} c-type band, and ν_{17} and ν_{18} a-type bands of both $^{11}B_2H_6$ and $^{10}B^{11}BH_6$ has been carried out. The analysis and the determination of the upper state Hamiltonian constants proved to be difficult since the rotational levels of the mains bands are strongly perturbed by nearby dark states. However, in the case of the ν_{18} band of $^{10}B^{11}BH_6$, it was possible to assign a few resonating lines of the $\nu_5+\nu_{10}$ band which borrow their intensity from the corresponding ν_{18} lines. Accordingly it was possible to derive a precise band center for $\nu_5+\nu_{10}$. Finally a comparison of the band centers determined in this work with those estimated in the literature[a] will be presented.

[a]J.L. Duncan, J. Harper, F. Hamilton and G.D. Nivellini, J. Mol. Spectrosc. 102, 416-440 (1983).