VIBRATIONALLY EXCITED BROMOMETHYLENE-MAPPING THE BENDING POTENTIAL SURFACE

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A wealth of high resolution data have now been obtained for HCBr and its deuterated isotopomer. Many vibronic bands have been rotationally analyzed and bending vibronic levels in the ground and first excited singlet states have been identified. The rotational levels in all the ground state vibrational levels so far studied at high resolution are regular and show no perturbations. This includes the (020) level of HCBr at 2311cm^{-1}which is above previously predicted positions of the low-lying triplet state. The bending vibrational spacings in the ground state do show some peculiarities, however. In the excited state, levels with K = 0 exhibit few, localized, perturbations, while those with K ¿ 0 are generally strongly perturbed. The measured vibronic levels should allow the determination of the Renner-Teller coupled bending potential surfaces and progress in this direction will be reported.

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