OPTICAL ZEEMAN SPECTROSCOPY OF THE $A^2\Pi/B^2\Sigma^+ - X^2\Sigma^+$ BAND SYSTEMS OF CALCIUM MONOHYDRIDE, CaH

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Numerous branch features in the (0,0) band of the $B^2\Sigma^+ - X^2\Sigma^+$ system and in the (0,0) band of the $A^2\Pi - X^2\Sigma^+$ system of calcium monohydride, CaH, have been recorded at near the natural line width limit in the presence of a tunable static magnetic field of up to 1200 Gauss. The observed Zeeman induced shifts were successfully modeled using the traditional effective Hamiltonian to account for the $\Delta v=0$ interaction and explicit inclusion of the interaction matrix elements for the perturbations between the ($v=1$) $A^2\Pi$ and ($v=0$) $B^2\Sigma^+$ states. A comparison is made with the analysis of the Zeeman effect of the (0,0) $B^2\Sigma^+ - X^2\Sigma^+$ $R_1$ (0.5) branch feature $b^{++}$.  

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