PRELIMINARY OBSERVATIONS OF THE A-X SYSTEM OF THE CALCIUM MONOMETHOXIDE RADICAL : THE ORIGIN BAND

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Laser excitation spectra of the $A\ ^2\mathrm{E} \leftarrow X\ ^2\mathrm{A}_1$ system of calcium methoxide were recorded at the University of New Brunswick. $CaOCH_3$ radicals were produced in a laser ablation source, using a 1.2 % mixture of methanol in He as a precursor. High resolution spectra were recorded in the range 15870-15985 cm^{-1} (F.W.H.M. 250 MHz) using a tunable, single-mode cw dye laser (CR 699 + autoscan), operating with DCM dye.
The spectra exhibit bands assigned to the two spin-orbit components of the origin band $A\ ^2\mathrm{E}_{3/2} \leftarrow X\ ^2\mathrm{A}_1$ and $A\ ^2\mathrm{E}_{1/2} \leftarrow X\ ^2\mathrm{A}_1$. Resolved *J* and *K* structures are observed, and tentatively assigned by comparison with synthetic spectra generated from a Hamiltonian given in the literature[a] and spectroscopic data[bc] available for the electronic ground state.

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[c] K. C. Namiki, J. S. Robinson and T. C. Steimle J. Chem. Phys. 13 5283-5289 (1998)