SUB-DOPPLER SPECTROSCOPY OF CN HYPERFINE COMPONENTS IN THE (1,0) $A^2\Pi \leftarrow X^2\Sigma^+$ BAND

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Following 193 nm photodissociation of NCCN in a flow cell, we use frequency-modulated radiation from a Ti: sapphire ring laser to measure sub-Doppler absorption spectra of the CN photoproducts. The Ti:sapphire laser beam is split into an unmodulated, strong, and a modulated, weak, beam which counter-propagate through the flow cell. The bleached hole in the Doppler-broadened CN rotational transitions caused by the saturation beam is detected by the probe. Scanning the frequency of both probe and saturation beams gives two copies of the hyperfine transitions separated by the modulation frequency. Using known ground state hyperfine constants, we have fit these measured transitions and determined hyperfine constants for the excited state.

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