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Experimental and Theoretical Investigation of the Electronic Spectroscopy of H_2CN PAUL J. DAGDIGIAN, Johns Hopkins University, ALEXEY TESLJA[1], Columbia University, MICHAEL BANCK, WOLFGANG EISFELD, Technische Universität M—"unchen — The electronic spectrum of H_2CN, recorded through cavity ring-down spectroscopy, is reported. The radical was prepared by 193 nm photolysis of monomeric formaldoxime vapor. Two diffuse features are observed in the 34800-35800 cm^{-1} spectral range, along with the $A - X$ (1,0) band of the OH co-fragment. These are assigned as vibronic transitions to the ground and $2b_1$ (umbrella mode) levels of the second excited, $^2A_1$ state from the ground $^2B_2$ state. Experimental and simulated rotational profiles of these bands agree extremely well with each other for an assumed type-B electric-dipole allowed $^2A_1 \leftarrow {}^2B_2$ transition appropriate to this transition. A theoretical investigation of the dissociation pathways for electronically excited H_2CN is also presented. The upper states of the observed bands cannot dissociated directly, but higher b_1 levels are above the excited-state dissociation limit.

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