

## DISPERSED FLUORESCENCE SPECTROSCOPY OF H<sub>2</sub>CO IN A FREE-JET EXPANSION

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High resolution dispersed fluorescence (DF) spectra of the excited vibrational levels in formaldehyde have been recorded to describe its S<sub>0</sub> potential energy surface. Formaldehyde was cooled in a free-jet expansion and excited with a laser to the 4<sup>1</sup>, 4<sup>0</sup>, 3<sup>1</sup>4<sup>1</sup> and 5<sup>1</sup> levels in S<sub>1</sub>. The resulting fluorescence was dispersed with a monochromator to yield S<sub>0</sub> vibrational spectra. Over 268 vibrational transitions have been assigned and fit to a polyad model. The model includes harmonic and anharmonic terms, and also accounts for resonances among vibrational levels. The results are compared to ab initio calculations.