UV DISSOCIATION OF ETHYL ETHYNYL ETHER AND THE PRODUCTION OF THE KETENYL RADICAL (HCCO): A STUDY BY TIME-RESOLVED FTIR EMISSION SPECTROSCOPY

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The ketenyl radical (HCCO) was generated through UV dissociation of Ethyl Ethynyl Ether (EEE), a precursor chosen for its unity quantum yield in the production of HCCO [a], a radical that plays an important role in the oxidation of most C2 hydrocarbons and is a major intermediate in the formation of CO and CO_2 in the troposphere. IR emission from photoproducts following the EEE precursor dissociation was detected by sub-microsecond time-resolved Fourier transform emission spectroscopy. Two previously unknown vibrational modes, the ν_1 CH stretch and the ν_3 symmetric CCO stretch of HCCO have been identified and will be presented. The nascent product distribution from the EEE photo-dissociation will be discussed.

[a] M. J. Krisch, J. L. Miller and L. J. Butler *J. Chem. Phys.* **119**(1), 176 July 2003.