OBSERVATION OF THE $\widetilde{A}$ - $\widetilde{X}$ ELECTRONIC TRANSITION OF THE 2-HYDROXYPROPYL PEROXY RADICAL VIA CAVITY RINGDOWN SEPCTROSCOPY

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Alkyl peroxy radicals are key intermediates in the atmospheric oxidation and low temperature combustion of hydrocarbons. In the past decade our group has obtained and analyzed the $\widetilde{A}$ - $\widetilde{X}$ spectra of a series of saturated and unsaturated organic peroxy radicals using cavity ringdown spectroscopy (CRDS). We have recently extended our investigations of peroxy radicals to include OH substituted peroxy radicals. Hydroxy peroxy radicals are key intermediates in the OH mediated oxidation of unsaturated hydrocarbons in the atmosphere and we recently reported the study of β-hydroxyethylperoxy radical (HOC_2H_4OO).[a] We have now made preliminary observation of the $\widetilde{A}$ - $\widetilde{X}$ spectrum of the 2-hydroxypropyl peroxy radical. With the aid of *ab initio* and DFT calculations we hope to obtain a conformer specific assignment of the bands.

[a] Rabi Chhantyal-Pun, Neal D. Kline, Phillip S. Thomas and Terry A. Miller. J. Phys. Chem. Lett., 1 (2010)