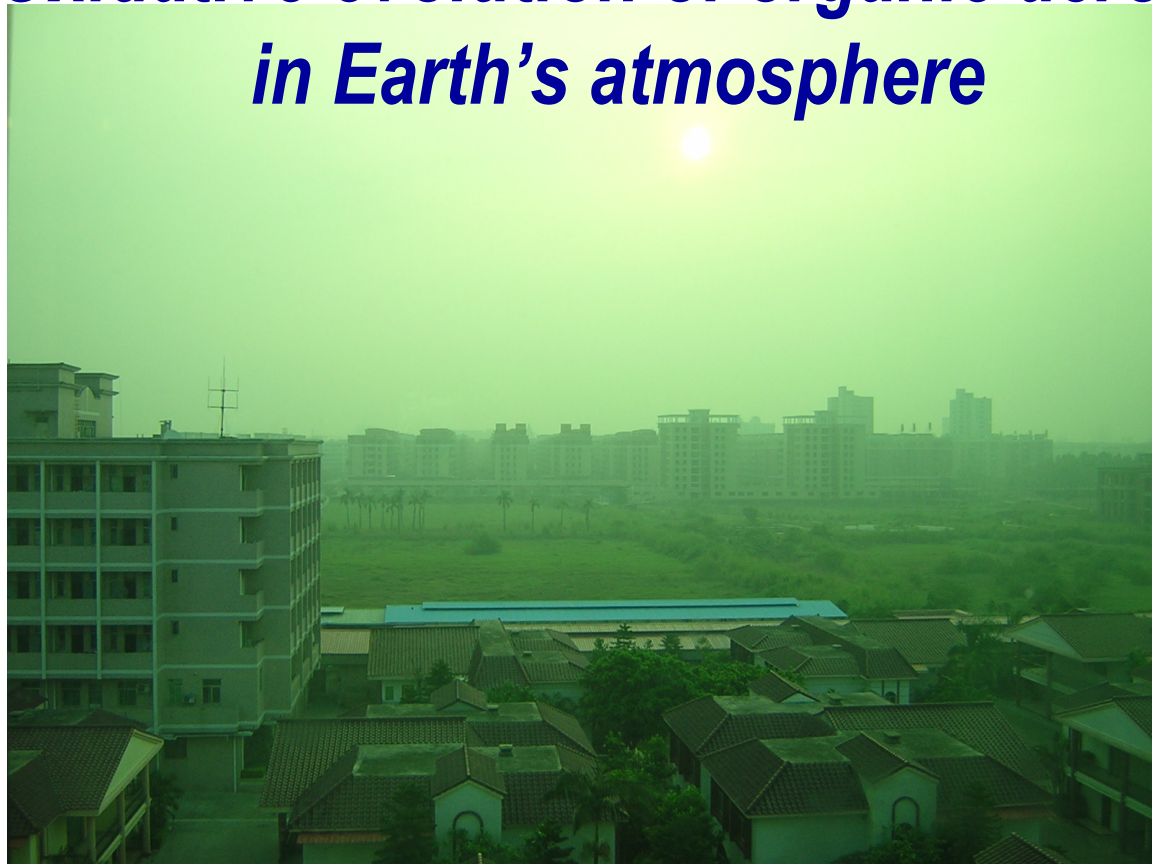


Earth System Initiative Young Faculty Seminars:

Oxidative evolution of organic aerosols in Earth's atmosphere



4:00 pm Tuesday, April 6th
MIT Building 54-915
Reception to Follow

Jesse Kroll

Assistant Professor
Civil & Environmental Engineering
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Organic aerosols (OAs) constitute a large, often dominant fraction of the total tropospheric particulate burden, and as such have important implications for visibility, human health and climate on Earth. However, state-of-the-art models do not predict OA loadings or properties with any accuracy, indicating large gaps in our understanding of the chemistry underlying OA formation and evolution. Here we present experiments aimed at probing the multi-generational oxidative processing ("aging") of OAs. These reactions are likely to be important in the atmosphere, but are rarely accessed in the laboratory or included in models. Results are presented within the context of a new framework for describing the chemistry of atmospheric organic species, using average carbon oxidation state as a metric for describing the degree of photochemical aging.



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