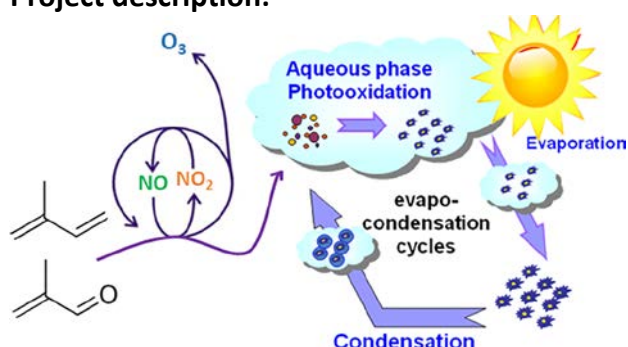


<b>Title</b>	<b>Cloud processing of atmospheric aerosol</b>
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**Project description:**

Chemical processes in clouds have been suggested to contribute substantially to organic aerosol particle mass. However, considerable uncertainties exist, e.g. with regards to the nature of the resulting aerosol particles which might be metastable and loose at least part of their organic mass during the cloud droplet evaporation.

The project is aimed at the investigation of cloud processes which are able to process organic constituents and produce organic aerosol particle mass.

The project will focus on the multiphase chemistry of atmospheric relevant polyfunctional precursors such as polyfunctional carbonyls and acids. With these precursors, a combination of aqueous-phase laboratory and smog chamber studies will be undertaken to examine the multiphase cloud processing. The planned chamber studies will use different seeds and oxidant precursors to examine the organic mass production under different environmental and diurnal conditions.

In the framework of this project, the prospective PhD student will experience working in an international collaborative environment, will gain experience in smog chamber studies, mass spectrometry and advanced techniques for data analysis.

**Publications:**

Giorio C.\*, et al. (2017) Cloud processing of secondary organic aerosol from isoprene and methacrolein photooxidation. *Journal of Physical Chemistry A*, 121 (40), 7641–7654.

Giorio C.\*, et al. (2017) Formation of metal-cyanide complexes in deliquescent airborne particles: a new possible sink for HCN in urban environment. *Environmental Science and Technology*, 51(24), 14107-14113.

**Collaborations/Network:**

Professor Jean-François Doussin, Université Paris-Est Créteil (France)

Professor Hartmut Herrmann, TROPOS - Leibniz-Institut für Troposphärenforschung (Germany)

Professor Anne Monod, Aix-Marseille Université (France)

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