

Séminaire SOLEIL

Techniques to analyze secondary organic aerosols (SOA). What are the advantages of Synchrotron-Mass Spectrometry ?

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Séminaires

Atmospheric aerosols are ubiquitous in the Earth's atmosphere. They are made up of complex colloidal mixtures of liquid and solid particulate matter and understanding their chemical and physical properties is crucial in elucidating their environmental and health impacts. However, despite much scientific effort over the last decade, the true impact of aerosols on the Earth's atmosphere is yet to be elucidated owing to large uncertainties and lack of fundamental knowledge on their sources, composition (hence physical properties) and formation mechanisms.

Recent experimental findings indicate organic aerosols (OA) are predominantly secondary in nature and can account for a significant fraction (10-70%) of total ambient atmospheric aerosol. However, current models significantly underestimate SOA (Secondary Organic Aerosol) production and their rate of formation.

Nowadays there are different techniques to analyze SOA that can be classified in two types: Off-line and On-line analysis. Between on-line analysis AMS (Aerosol Mass Spectrometry) with impact electron ionization and ATOFMS (Aerosol Time Of Flight Mass Spectrometry, laser based ionization technique) are the most widely used techniques. In the last year a new technique has been started to use: AMS with synchrotron ionization. The main advantage of this new technique is the possibility to differentiate isotopes and minimize fragmentation making easier compound identification.

In this talk some results obtained analyzing SOA formed in simulation chambers (EUPHORE chamber, Valencia, Spain and in the chamber built in Soleil Synchrotron) analyzed with ATOFMS and Synchrotron-AMS will be presented. Both techniques will be compared.



Ce séminaire sera suivi d'une pause-café



Formalités d'entrée : accès libre dans l'amphi du Pavillon d'Accueil. Si la manifestation a lieu dans le Grand Amphi SOLEIL du Bâtiment Central, merci de vous munir d'une pièce d'identité (à échanger à l'accueil contre un badge d'accès).

SYNCHROTRON SOLEIL

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