

Offre de Stage IPSL

(Soutenu par le programme EUR IPSL-*Climate Graduate School*)

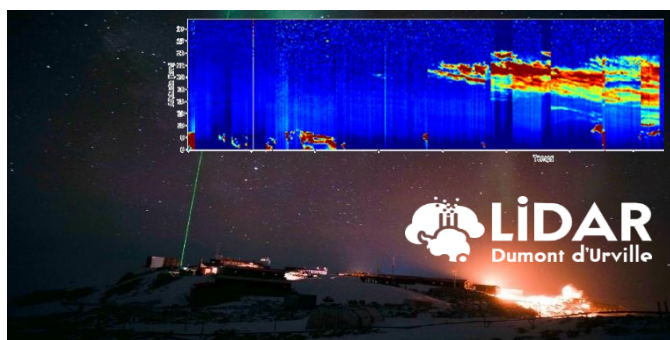
Titre du sujet de stage : Traitement des observations lidar de la station antarctique française, lien avec la mission spatiale EarthCare

Description du sujet (1 page maximum) :

Polar atmosphere research has attracted major scientific focus in the latter years with an array of scientific questions for instance dealing with cloud formation processes, stratospheric ozone depletion or impact of long range aerosol transport. Besides, accurate assessment of the vertical exchanges between the different atmospheric layers remains of primary importance for a global understanding of the overall climate system.

Remote sensing measurements using laser light (lidar) allow for characterization of the optical and physical properties of the chemical and particle composition in the atmosphere. In the frame of the NDACC network (Network for Detection of Atmospheric Composition Changes), lidar time series are acquired on the Dumont d'Urville (66°S - 140°E) Antarctic station in the frame of a program supported by the french polar institute IPEV.

We propose in this internship a thorough analysis of the 2024/2025 lidar measurement seasons to try to detect fine aerosol/cloud signatures and possible occurrence patterns using overall lidar signal properties and temperature throughout the year, also comparing groundbased measurements to the observations of the spaceborne ATLID lidar (EarthCARE mission) launched last year. Using the backscattering and depolarisation coefficients, we derive aerosol/cloud type classification encompassing background sulfate aerosols, tropopause cirruses and polar stratospheric clouds, volcanic and biomass burning plumes. The careful speciation of the frequent aerosol plumes coming from the lower latitudes also often require air mass history and dedicated data inversion procedure. Tools are available to handle L1 and L2 data products.



Responsable du stage (Nom/prénom/statut) :

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Laboratoire concerné :

LATMOS ([Laboratoire Atmosphères, Milieux, Observations Spatiales](#))

Adresse à laquelle a lieu le stage :

Campus de Jussieu

Equipe de recherche concernée (si pertinent) ou autre participant à l'encadrement du stage :

Atmosphère/Polaire

Niveau du stage (Licence, M1, M2, *internship*) :

M2

Licence ou Master(s) où sera proposé le sujet :

FRS, MOCIS, NewSpace, Arctic Studies

Thème scientifique de l'IPSL concerné :

Utilisation des observations sol et spatiales pour l'étude de l'atmosphère polaire

Durée du stage : 6 mois préférablement

Période : flexible

Est-il prévu une thèse dans le prolongement du stage ?

Oui (sous réserve de financement)