# INSTITUT PIERRE SIMON LAPLACE

## DES SCIENCES DE L'ENVIRONNEMENT

The Pierre-Simon Laplace Institute was created in the early 1990s with the aim of sharing the skills of several laboratories in the Paris area that are involved in terrestrial and planetary sciences. It is composed of 5 laboratories and approximately 750 people (280 researchers, 240 engineers, technicians and administrative staff, and 230 Ph.D. students and post-docs). This represents more than one third of the national research potential in the fields of oceanic and atmospheric science. The IPSL is financially supported by the Centre National de la Recherche Scientifique (CNRS), the Université Pierre et Marie Curie and the Université Versailles Saint-Quentin en Yvelines. The institute is also supported by the Commissariat à l'Énergie Atomique (CEA), the Institut de Recherche et Développement (IRD), the École Normale Supérieure (ENS), the École Polytechnique and the Centre National d'Études Spatiales (CNES).

**The laboratories that together form the IPSL are :**

- the Centre d'étude des Environnements Terrestre et Planétaires (CETP),
- the Laboratoire de Météorologie Dynamique (LMD)
- the Laboratoire d'Océanographie et du Climat : Expérimentation et Approches Numériques (LOCEAN)
- the Laboratoire des Sciences du Climat et de l'Environnement (LSCE)
- the Service d'Aéronomie (SA)

The main objectives of the IPSL are :

- to understand the dynamic, chemical and biological processes within the oceans and atmosphere and to understand how the atmosphere, oceans and biosphere exchange matter and energy ;
- to understand the natural climate variability on regional and global scales, and to understand past and future trends in the climate of our planet ;
- to understand the impacts of human activities on the climate and to predict the climate at seasonal and inter-annual scales (monsoon, ENSO, NAO) ;
- to understand the physics of the Sun-Earth interactions in the close and distant terrestrial environment, and to use the skills developed in the study of our terrestrial environment to study the environments of other planets.

To achieve these objectives, the institute develops experimental techniques (lidar, radars, radiometers, spectrometers, imagers, magnetometers) intended to probe our environment either from the ground, or from various platforms (planes, balloons, ships, satellites) during short campaigns or on a regular basis. The collected data are stored in the data centre of the IPSL. The institute is also developing a climate model that couples the atmosphere, the oceans, sea ice, and continental surfaces. This model relies on studies of physical processes undertaken in the laboratories of the IPSL.

The institute also takes part in the teaching of basic and specialized physics in the universities to which it is attached (Université Pierre et Marie Curie and Université Versailles Saint-Quentin) and it is strongly involved in working out the new programs related to the harmonization of European training.

Institut Pierre Simon Laplace Sciences de l'Environnement

CNRS CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

UNIVERSITE PIERRE & MARIE CURIE LA SCIENCE A PARIS

UNIVERSITE DE VERSAILLES SAINT-QUENTIN-EN-YVELINES

CEA

IRD Institut de recherche pour le développement

ENS

ECOLE POLYTECHNIQUE

cnes

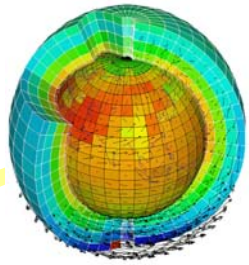
Carbon cycle

Paleoclimatology

Ocean biology
and dynamics

Space observations

Planetology



Climate modelling

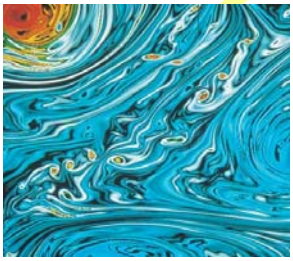
***Analysis of climate processes and trends***

***Instrumental developments and observations***

***Modelling***

Atmospheric physics
and chemistry

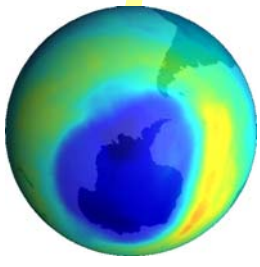
Pollution



Fluid dynamics

Oceanography

Impact studies



Ozone

Water cycle