Institut Pierre Simon Laplace

Institut de recherche en sciences de l'environnement

THE INSTITUT PIERRE-SIMON LAPLACE (IPSL)

AIMS, CONTEXT, ORGANIZATION, ACHIEVEMENTS

Pierre-Simon Laplace

(1749-1827)

French mathematician, astronomer, physicist, and politician

- Spherical harmonics
- Potential theory
- Thermodynamics
- Probabilities

A brief history

It is a « Fédération de Recherche » of the CNRS.

IPSL was created by Gérard Mégie in 1991.

Jean Jouzel was the second director (2000-2009).

Hervé Le Treut is the third director (2010-2018).

Robert Vautard will be the next director (2019-)

IPSL was also an « Observatory for Sciences of the Universe » (OSU) from 1996 to 2008. The L-IPSL project of a « Laboratory of Excellence » was succesfully selected in 2011, which is now replaced by the « Climate Graduate School » EUR.

An institute in the Paris area

IPSL gathers 9 laboratories on 14 locations

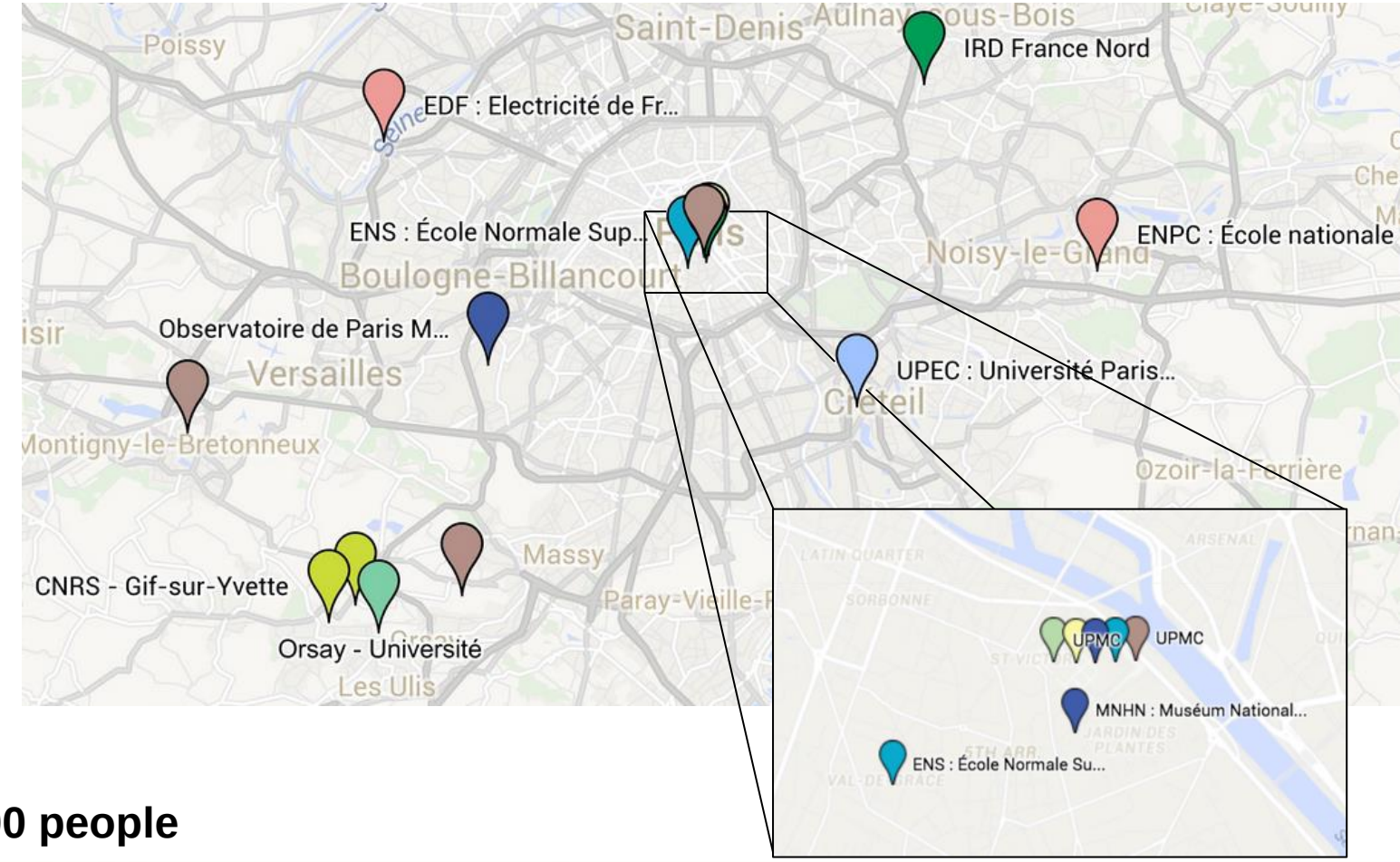
More than 1000 people

An institute in the Paris area

IPSL gathers 9 laboratories on 14 locations

IPSL en Ile de France

- Fédération IPSL
- LMD
- LOCEAN
- CEREA
- LATMOS
- LSCE
- GEOPS
- LERMA
- LISA
- METIS



More than 1000 people

The participating laboratories

LATMOS (UVSQ, UPMC, CNRS): Atmospheric chemistry, mesoscale processes, ionospheres and exospheres, comets

LISA (UPEC,CNRS): Atmospheric chemistry, exobiology, spectroscopy

LMD (ENS,UPMC, X, CNRS) : Atmospheric physics and dynamics, climate

LOCEAN (UPMC,MNHN, IRD, CNRS) : Physical and biogeochemical studies of the ocean, tropical environments

LSCE (UVSQ, CEA,CNRS) : Paleoclimatology, biogeochemical cycles, climate studies and impacts

CEREA (EDF, ENPC): Air quality, mathematical methods

IDES (U-Psud, CNRS) : Hydrology, planetary geology, soil physics

METIS (UPMC, CNRS): Hydrology, soil physics and biochemistry, impacts

Atmos team of LERMA (UPMC,CNRS, Paris Observatory): Spectroscopy

Key scientific themes

Climate change and impacts
Key climate processes
From global to regional environments
Past climates
Global biogeochemical cycles: carbon, nitrogen
Air quality and active chemistry within the atmosphere
Biogeochemistry of the oceans
Planetology of the solar system (Mars, Venus, Titan)
Instrumental physics
Mathematical and statistical techniques

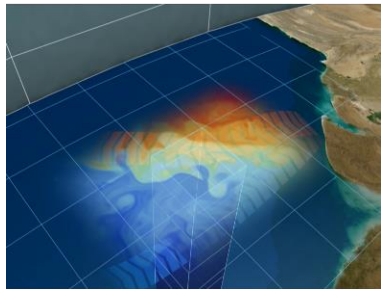
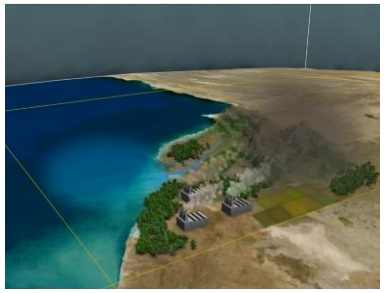
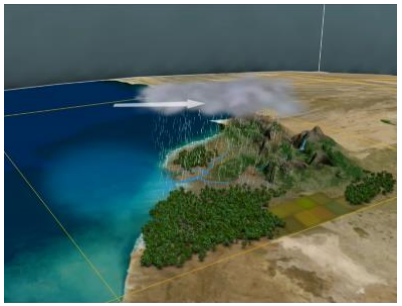
IPSL also develops and provides platforms/services to link those physical themes with wider (scientific or societal) issues:

Instrumented site: SIRTA	- http://sirta.ipsl.fr
Data and computing centre ESPRI	- http://mesocentre.ipsl.fr
Climate model IPSL-CM and its environment	- http://cmc.ipsl.fr
Climate services and expertise	- http://cse.ipsl.fr
Communication	- http://www.ipsl.fr

SIRTA observatory:
a node for national and international networks

http://sirta.ipsl.fr/
Part of ACTRIS

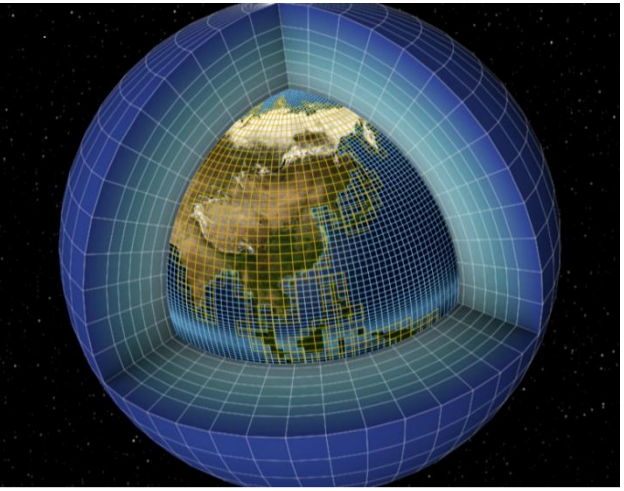
IPSL Climate Modelling Centre (IPSL-CMC)

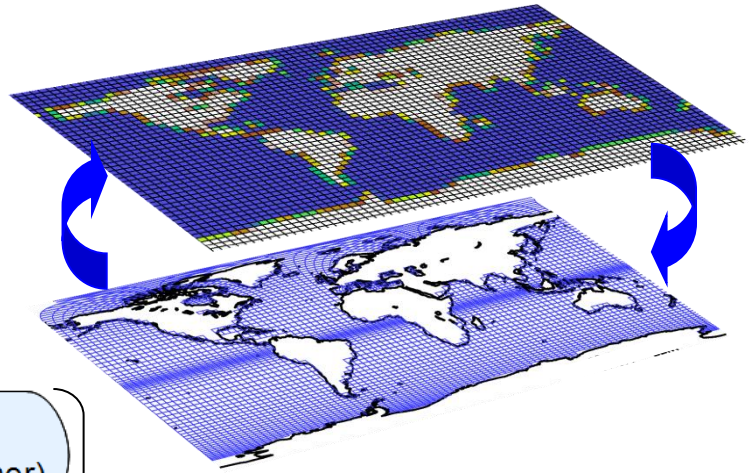
INCA / REPROBUS
(chimie atmosphérique)
(aérosol)

LMDZ
(atmosphère)

ORCHIDEE
(surfaces continentales)
(végétation)



OASIS
(coupleur)



OPA
(océan)

LIM
(glace de mer)

PISCES
(biogéochimie marine)

NEMO

https://cmc.ipsl.fr/
Part of CLIMERI:
http://climeri-france.fr

ESPRI data and computing centre

Located at Sorbonne Université (Jussieu) and Ecole Polytechnique (Palaiseau)
Brings together computing, observational data and climate model data
Hosts the IPSL ESGF node
Will be linked to a new 3-4 Po multi-model CMIP6 archive located at IDRIS
Part of CLIMERI-France: French infrastructure for climate modelling

https://mesocentre.ipsl.fr/