



1SC4691 – Climate change forecasting

Instructors: Stella BOURDIN, Pascal DA COSTA

Department: DOMINANTE - ENERGIE

Language of instruction: FRANCAIS

Campus: CAMPUS DE PARIS - SACLAY

Workload (HEE): 40

On-site hours (HPE): 27,00

Description

A climate model is a "numerical representation of the climate system, based on the physical, chemical and biological properties of its components, their interactions and feedbacks...". (IPCC, 2018)

In this "Enseignement d'Intégration", you will find the latest IPCC special reports "PLANT HEATING OF 1.5°C"... " OCEAN AND CRYOSPHERE IN THE CONTEXT OF CLIMATE CHANGE" published in 2018 and 2019, as well as the work of the Nobel Prize for Economics 2018, WILLIAM NORDHAUS, on climate economics.

The aim is either to understand how the iLOVECLIM model works and analyse its simulations using Python (time series, anomalies, regional studies, etc.), or to discover and use (again using Python) the NORDHAUS DICE model.

(for Dynamic Integrated model of Climate and the Economy). Exchanges between the two groups are scheduled during the week.

Quarter number

ST4

Prerequisites (in terms of CS courses)

No.

Syllabus

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Class components (lecture, labs, etc.)

Climatic or economic simulations under python.

Grading

Project and defense.

Resources

Speakers :

Laboratory of Environmental and Climate Sciences CEA-CNRS-UVSQ-IPSL;
Industrial Engineering Laboratory / Sustainable Economy Team
CentraleSupélec and International Research Centre for Environment and Development.

Learning outcomes covered on the course

Recreate the climatic and economic simulations of chapters 1 and 3 of the IPCC report : Assessing and Negotiating Pathways to Combat Global Warming.

Description of the skills acquired at the end of the course

C4 C6 C7 C8