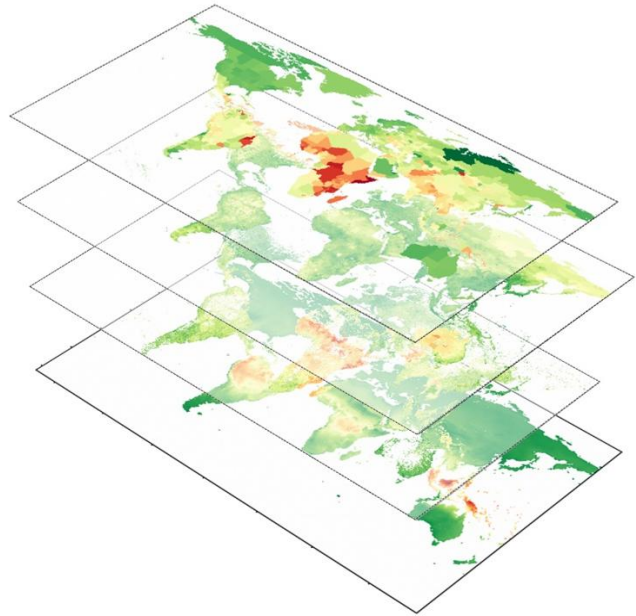


CLIMATE PROJECTIONS

From climate modelling to risks for humans and adaptation options

The module aims at exploring certainties and uncertainties on climate change and putting some substance behind the statement “*every fraction of degree of global warming matters*”. It will give tools to analyze **climate projections** and **socioeconomic data**. It will explore the questions of who is, and who will be, exposed to climate change impacts, and how vulnerability may be defined, measured, and reduced with **adaptation** measures. The whole module will use the case of **heatwaves** to conduct the analyses, and focus on the urban heat island effect.



Content

- Manipulate climate projections and population dataset with Jupyter notebooks (statistical and spatial analysis in Python).
- Analyze the evolution of heatwaves in a changing climate.
- Define and measure exposure and vulnerability to climate change impacts.
- Read and understand a research article, a systematic review and IPCC Assessment Report Figures.
- Explore the mechanisms explaining the urban heat island effect, and adaptation options.

Learning objectives

- Know how climate projections are constructed with climate models.
- Know how some population and socioeconomic datasets are built.
- Define and distinguish projection and predictions, risk and uncertainty.
- Articulate different spatial and temporal scales.
- Use statistical and spatial analysis tools to study climate and socioeconomic data.
- Use concepts and indicators to measure climate risks and vulnerability.
- Understand how climate risks may evolve in the future depending on actions.
- Know how adaptation options can be assessed.
- Understand how scientific research is conducted, assessed and communicated.

Terms of evaluation

A written note documenting climate risks and proposing adaptation options for a chosen territory (in small groups) and participation during the sessions.