Côme Cheritel

Education

2021-2024 **Paris School of Economics and IIASA**, *PhD Student under the supervision of Katheline Schubert and Raya Muttarak.*

2020-2021 **Ponts ParisTech and AgroParisTech**, *Master of Public Administration : Public Policies for Sustainable Development.*

2019-2020 **Paris School of Economics**, *Master of Science in Economics : Analysis and Policy in Economics.*
Master thesis subject : *A stylized model for energy, population, the economy and the environment* under the supervision of Katheline Schubert and Hippolyte d'Albis

2019-2021 **Ponts ParisTech**, *Engineering degree.*

2016–2019 **Ecole Polytechnique**, *Polytechnicien engineering degree.*

2016–2017 **University Paris-X Nanterre**, *Bachelor of Arts in History.*

2014–2016 **Lycée Louis-le-Grand**, *Two-year undergraduate in mathematics and physics.*

Experience

2022 **Visiting researcher**, *University of Bologna*, Bologna, Italy.

2022 **Grader**, *Science Po Paris*, Paris, France.
Grader for Professor Scott Barrett class "Climate Change and Diplomacy"

2021-2021 **Junior consultant**, *Inspection Générale des Finances*, Paris, France.
Strategy consulting missions for the French Ministry of Economy and Finance.

2020-2020 **Data analyst, statistician and modeller**, *AP-HP*, Paris, France.
Volunteer, member of the crisis unit of the Paris hospitals during the COVID-19 crisis: creation of the dashboard of the crisis unit, statistical studies of the evolution of the epidemic and epidemiological modeling of the epidemic.

2019-2019 **Associate researcher**, *IIASA*, Vienna, Austria.
Assessing the climate uncertainty over the Social Cost of Carbon: Integrated modeling of the economy-climate system, study of climate uncertainty and prospective scenarios.

2018-2018 **Assistant project manager**, *Sogea Satom (VINCI)*, Kampala, Uganda.
Three-month internship: supervision and management of the Nakivubo and Kinawataka Main Sewers Project for the city of Kampala as well as the Katosi Water Treatment Plant Project.

2017–2018 **Cadet Officer**, *Armée de terre*, Varces.
First, training at Saint-Cyr and then training officer within the 27^{th} CCTM (Mountain Command and Transmission Company).

Langues and computing skills

English	C1	German	B1
R	Statistics and spatial analysis	Stata	Econometrics
Python	Numerical modelling	Office	Word, Excel, Powerpoint, VBA

Hobbys

Mountaineering	Rockclimbing, alpinism, ski touring
Engagement	Regular blood donor
Defense	Officer in the army reserve

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Research Projects

Climate Uncertainty and the Social Cost of Carbon, *With Thomas Gasser, Armon Rezai, Artem Baklanov and Michael Obersteiner*.

Cost-benefit integrated assessment models (IAMs) include a simplified representation of both the anthropogenic and natural components of the Earth system, and of the interactions and feedbacks between them. As such, they embed economic- and physics-based equations, and the uncertainty in one domain will inevitably affect the other. Most often, however, the physical uncertainty is explored by testing the sensitivity of the optimal mitigation pathway to a few key physical parameters; but for robust decision-making, the optimal pathway itself should ideally embed the uncertainty.

The goal of this project is, first, to propose a compact climate model that features climate uncertainty with a bayesian calibration. And second to propose a way to take this uncertainty into account for robust decision-making.

Generational carbon accounts and the impact of the age structure and population dynamics on carbon emissions.

Population ageing and global warming are among the greatest challenges that humanity will face during the 21st century. Moreover, the characteristic time of persistence of greenhouse gases like CO2 in the atmosphere is of the same order as that of a human life. Thus, a certain emission also has consequences on future generations making global warming an intergenerational issue. From this point of view, the study of the influence of the age structure of the population as well as the identification of generational trends appears to be a particularly interesting issue. While the impact of population size and affluence on emissions has been extensively studied in an aggregated way, in particular with the IPAT identity framework, there is no scientific consensus concerning the impact of the age structure on carbon emissions. Indeed, it is conceivable that ageing will have an impact on an individual's carbon footprint, as ageing leads to changes in behaviour and consumption practices, thus implying a change in energy consumption over the lifespan. Moreover, indirect effect of ageing, such as household size shrinking may result in a variation in energy consumption. However, it is much more difficult to estimate whether this impact will be upwards or downwards.

The goal of this empirical project is to study the impact of the demographic structure and dynamics on carbon emissions in several countries. First, I would like to propose a breakdown of the carbon footprint by age group, a so-called Generational Carbon Accounts based on household budget survey micro-data and the use of input-out table. Then I would to disentangle age effects, generation effects and time trend which would allow an analysis of the impact of population ageing on global warming.

Assessing the impact of of climate change on fertility in developping countries, *With Raya Muttarak and Roman Hoffmann*.

While the impact of global warming on GDP, productivity, mortality or international migration has been widely discussed. There are few studies dealing with the impacts of global warming on fertility in developing countries. Yet this is essential data for exploring the future of our societies and understanding the long-term consequences of global warming on them. Thus, the objective of this project is to produce a first-ever analysis of the potential impacts of global warming on fertility in developing countries, by combining data from the Demographic and Health Surveys with climate data.

Integrating endogenous population dynamics in climate-economics scenarios.

In the scenarios considered in the economics and climate scientific community, population dynamics is fixed exogenously and is used as a driver for Integrated Assessment Models (IAMs). In particular, these models ignore the feedbacks of climate change on the economy, as well as on population dynamics. Furthermore, they cannot consider the effect of demographic deviation on the economy, since, population as well as GDP are the basis and cornerstone of these scenario: there is a potential huge methodological blindspot in the field of prospective modelling.

The goal of this project is thus to propose a framework that allow to propose scenarios that endogenously take into account the impact of climate change on population and on the economy.