

GUIVARCH Céline

Senior researcher at CIRED, Associate Professor at Ecole des Ponts ParisTech



Sex Female | [Date of birth](#) 23/06/1980 | [Nationality](#) French | married, two children

[Location](#) CIRED, 45bis avenue de la Belle Gabrielle, 94736 Nogent-sur-Marne, France

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Areas of Expertise

- ▶ Impacts and mitigation of climate change
- ▶ Modelling, scenarios and decision making under uncertainty

Climate Change is one of the major challenges of 21st century. My research aims at understanding the scale of the challenge for our societies and economies, and at evaluating trajectories to meet it.

Current positions

Associate Professor at Ecole des Ponts ParisTech, Research Director at CIRED

IPCC Working Group III on mitigation Lead Author for 6th Assessment Report

French Climate Change Committee ([Haut conseil pour le climat](#)) member

Work Experience

(2011-present) [Associate Professor, Senior Researcher](#)

Ecole des Ponts ParisTech, CIRED, Nogent-sur-Marne, France

- Research: climate change economics, modelling, impacts, mitigation, climate policies analysis.
- Teaching: courses in climate economics and modelling in several top-level engineering schools.
- Management: Leading the Imaclim-R world modelling team. PhD supervisor.

(2010-2011) [Climate Change Expert](#)

International Energy Agency

- Expertise on various climate change topics (coal power plants and climate change mitigation, adaptation of the energy sector to climate change...).

(2006-2010) [PhD student](#)

Ecole des Ponts ParisTech, CIRED, Nogent-sur-Marne, France

- PhD in climate change economics

(2004-2005) [Project Coordinator](#)

Sofreco, Kazakhstan

- Regional Coordinator of a technical assistance European project: TACIS project “Technical Assistance to Central Asian countries with respect to their climate change commitments” – Bottom-Up modelling (MARKAL) ; analysis of GHG reduction strategies ; implementing CDM projects.

Education

- (2017) [Habilitation \(HDR\)](#)
Université Paris-Est, France
- HDR thesis « Uncertainty and inertia at the heart the climate issue : numerical explorations in climate change economics »
- (2010) [PhD](#)
Université Paris-Est, France
- PhD thesis « Climate change mitigation costs in a second-best world » (supervisor: J.-C. Hourcade)
- (2006) [Master](#)
Ecole des Ponts ParisTech, France
- Public economy, environmental policies and economy, development assistance and aid.
- (2005) [Engineering degree, master](#)
Ecole des Ponts ParisTech, France
- Environmental sciences (sustainable development, risks, climate change, water and sanitation) and GIS (Geographic Information Systems).
- (2004) [Engineering degree](#)
Ecole Polytechnique, France
- Physics, Mechanics, Sciences of planet Earth (meteorology, seismology, physics and chemistry of the atmosphere) and Applied Mathematics.

Personnal Skills

- Languages French (mother tongue), English (Proficient user), Russian (Basic user).
- Communication skills • Intercultural skills: good ability to adapt to multicultural environments, gained though my work experience in Central Asia, in international research projects and in the International Energy Agency.
• Team work: I worked in various teams from students associations to research teams.
- Managerial skills • Project and team management: I coordinated the work of five national project offices and several international experts for a European TACIS project; I am currently leading a team of 10 researchers.

Academic honors, awards and recognition

- IPCC, selected Lead Author for WGIII 6th Assessment Report, chapter 3 “Mitigation pathways compatible with long-term goals”.
- 1st year Inaugural Lesson, Ecole des Ponts ParisTech, 2017. [Climate Change – challenges for the economy. \(video\)](#).
- Selected participant to [DISCCRS VIII Symposium](#). Dissertations Initiative for the Advancement of Climate Change Research, October 12-19, 2013, Colorado, USA. DISCCRS brings together cohorts of competitively selected early career scientists interested in working across traditional disciplinary boundaries. The goal was to develop international, interdisciplinary collegial networks among scholars likely to become leaders in their chosen fields.
- L.E. Rivot Award of the National Academy of Sciences for my rank at Ecole Polytechnique (2003).

Publications

h-index : 21 (googlescholar), 17 (Scopus)

Peer-reviewed articles

- Perrier, Q., C. **Guivarch**, O. Boucher. 2019. "Diversity of greenhouse gas emission drivers across European countries since the 2008 crisis." *Climate Policy* (online first).
- Fisch-Romito, V., C. **Guivarch**. 2019. "Transportation infrastructures in a low carbon world: An evaluation of investment needs and their determinants." *Transportation Research Part D: Transport and Environment* 72, 203-219.
- Méjean, A., C. **Guivarch**, J. Lefèvre, M. Hamdi-Cherif. 2019. "The transition in energy demand sectors to limit global warming to 1.5°C." *Energy Efficiency* 12, 441-462.
- Bataille, C., C. **Guivarch**, S. Hallegatte, J. Rogelj, H. Waisman. 2018. "Carbon prices across countries." *Nature Climate Change* 8, 648–650.
- McCollum, D. L., C. Wilson, M. Bevione, S. Carrara, O. Y. Edelenbosch, J. Emmerling, C. **Guivarch**, et al. 2018. "Interaction of Consumer Preferences and Climate Policies in the Global Transition to Low-Carbon Vehicles." *Nature Energy* 3, 664–673.
- Vrontisi, Z., G. Luderer, B. Saveyn, K. Keramidas, L. Aleluia Reis, L. Baumstark, C. Bertram, H. Sytze de Boer, L. Drouet, K. Fragkiadakis, O. Fricko, S. Fujimori, C. **Guivarch**, A. Kitous, V. Krey, E. Kriegler, E. O Broin, L. Paroussos, D. van Vuuren. 2018. "Enhancing Global Climate Policy Ambition towards a 1.5 °C Stabilization: A Short-Term Multi-Model Assessment." *Environmental Research Letters* 13 (4): 044039.
- Séférian, R., M. Rocher, C. **Guivarch**, J. Colin. 2018. "Constraints on biomass energy deployment in mitigation pathways: the case of water scarcity." *Environmental Research Letters* 13(5), 054011.
- Benveniste, H., O. Boucher, C. **Guivarch**, H. Le Treut, P. Criqui. 2018. "Impacts of nationally determined contributions on 2030 global greenhouse gas emissions: uncertainty analysis and distribution of emissions." *Environmental Research Letters* 13(1), 014022.
- **Guivarch**, C. and A. Pottier. 2018. «Climate Damage on Production or on Growth: What Impact on the Social Cost of Carbon?». *Environmental Modeling & Assessment* 23 (2) : 117-130.
- Audoly, R., A. Vogt-Schilb, C. **Guivarch**, A. Pfeiffer. 2018. "Pathways toward zero-carbon electricity required for climate stabilization." *Applied Energy* 225: 884-901.
- Perrier, Q., C. **Guivarch**, O. Boucher. 2018. "L'objectif « zéro émissions nettes » de l'Accord de Paris : signification et implications." *La Météorologie* n°103.
- **Guivarch**, C., R. Lempert, E. Trutnevyte. 2017. «Scenario techniques for energy and environmental research: An overview of recent developments to broaden the capacity to deal with complexity and uncertainty.» *Environmental Modelling & Software* 97 : 201-210. [**Guest editor for the Special Issue**]
- Marangoni, G., M. Tavoni, V. Bosetti, E. Borgonovo, P. Capros, O. Fricko, D. E. H. J. Gernaat, C. **Guivarch**, P. Havlik, D. Huppmann, N. Johnson, P. Karkatsoulis, I. Keppo, V. Krey, E. Ó Broin, J. Price, D. P. van Vuuren. 2017. «Sensitivity of projected long-term CO2 emissions across the Shared Socioeconomic Pathways.» *Nature Clim. Change* 7 (2) : 113-117.
- Ó Broin, E., C. **Guivarch**. 2017. «Transport infrastructure costs in low-carbon pathways.» *Transportation Research Part D: Transport and Environment* 55 : 389-403.
- Maury, O., L. Campling, H. Arrizabalaga, O. Aumont, L. Bopp, G. Merino, D. Squires, W. Cheung, M. Goujon, C. **Guivarch**, S. Lefort, F. Marsac, P. Monteagudo, R. Murtugudde, H. Österblom, J.F. Pulvenis, Y. Ye, B.J. van Ruijven. 2017. «From shared socio-economic pathways (SSPs) to oceanic system pathways (OSPs): Building policy-relevant scenarios for global oceanic ecosystems and fisheries.» *Global Environmental Change* 45: 203-216.
- **Guivarch**, C., S. Monjon. 2016. «Identifying the main uncertainty drivers of energy security in a low-carbon world: The case of Europe.» *Energy Economics* 64 : 530-541.
- **Guivarch**, C., J. Rozenberg, V. Schweizer. 2016. «The diversity of socio-economic pathways and CO2 emissions scenarios: Insights from the investigation of a scenarios database.» *Environmental Modelling & Software* 80 : 336-353.
- Berry, A., Y. Jouffe, N. Coulombel, C. **Guivarch**. 2016. «Investigating fuel poverty in the transport sector: Toward a composite indicator of vulnerability.» *Energy Research and Social Science* 18 : 7-20.
- Trutnevyte, E., C. **Guivarch**, R. Lempert, N. Strachan. 2016. «Reinvigorating the scenario technique to expand uncertainty consideration.» *Climatic Change* 135 (3) : 373-379.
- Gasser, T., C. **Guivarch**, K. Tashiiri, C. D. Jones, P. Ciais. 2015. «Negative emissions physically needed to keep global warming below 2°C.» *Nature Communications* 6 : 7958.
- **Guivarch**, C., S. Monjon, J. Rozenberg, A. Vogt-Schilb. 2015. «Would climate policies improve the European energy security?» *Clim. Change Econ.* 06 : 1550008.

- Branger, F., L.-G. Giraudet, C. **Guivarch**, P. Quirion. 2015. « Global sensitivity analysis of an energy-economy model of the residential building sector. » *Environmental Modelling & Software* 70, 45-54.
- (in French) Berry, A., Jouffe, Y., **Guivarch**, C., Coulombel, N. 2015. Comment mesurer la précarité énergétique en matière de transport. *La Revue de l'énergie* n° 625, 203-209.
- (in French) Cassen, C., **Guivarch**, C., Lecocq, F. 2015. Les co-bénéfices des politiques climatiques : un concept opérant pour les négociations climat ?. *Natures Sciences Sociétés*, 23, supplément, S41-S51.
- (in French) **Guivarch**, C., Cassen, C. 2015. L'atténuation du changement climatique: retour sur le 5e rapport du GIEC. *La Météorologie* 88, 97-105.
- (in French) Boucher, O., Dufresne, J.-L., Vial, J., Brun, E., Cattiaux, J., Chauvin, F., Salas y Méliá, D., Voldoire, A., Bopp, L., Braconnot, P., Ciais, P., Yiou, P., Guilyardi, E., Mignot, J., **Guivarch**, C. 2015. Projection des changements climatiques futurs. *La Météorologie* 88, 65-68.
- (in French) **Guivarch**, C. et Rozenberg, J. 2014. 'Produire des scénarios par centaines. Comment les démarches statistiques renouvellent les approches prospectives.' *Futuribles* 398, 49-56.
- Rozenberg, J., C. **Guivarch**, R. Lempert, S. Hallegatte. 2014. « Building SSPs for climate policy analysis: a scenario elicitation methodology to map the space of possible future challenges to mitigation and adaptation. » *Climatic Change* 122(3) : 509-522.
- **Guivarch**, C., S. Hallegatte. 2013. « 2°C or not 2°C? ». *Global Environmental Change* 23(1) : 179-192.
- Waisman, H.D., C. **Guivarch**, F. Lecocq. 2013. «The transportation sector and low-carbon growth pathways » *Climate Policy* 13(1): 106-129.
- (in French) Vogt-Schilb, A., **Guivarch**, C., Hourcade, J.C. 2013. Les véhicules électrifiés réduiront-ils les émissions de carbone ? *Revue de l'Energie* 611 (janvier/février): 5-11.
- (in French) **Guivarch**, C., Rozenberg, J. 2013. Les nouveaux scénarios socio-économiques pour la recherche sur le changement climatique. *Revue Pollution Atmosphérique*. Climat, santé, société. N° spécial climat - Juin 2013.
- Waisman, H.D., **Guivarch**, C., Grazi, F., Hourcade, J.-C. 2012. « The Imaclim-R Model: Infrastructures, Technical Inertia and the Costs of Low Carbon Futures under Imperfect Foresight ». *Climatic Change* 114(1) : 101-120.
- Giraudet, L.-G., **Guivarch**, C., Quirion, P. 2012. « Exploring the potential for energy conservation in French households through hybrid modelling ». *Energy Economics* 34(2) : 426-445.
- **Guivarch**, C., S. Mathy. 2012. « Energy-GDP decoupling in a second best world - a case study on India. » *Climatic Change* 113(2) : 339-356.
- Giraudet, L.-G., C. **Guivarch**, P. Quirion. 2011. « Comparing and combining energy saving policies. Will proposed residential sector policies meet French official targets ? » *The Energy Journal*, 32 : 213-242.
- **Guivarch**, C., Hallegatte, S. 2011. « Existing infrastructure and the 2°C target ». *Climatic Change* 109:801-805.
- Hamdi-Cherif, M., **Guivarch**, C., Quirion, P. 2011. « Sectoral targets for developing countries: Combining "Common but differentiated responsibilities" with "Meaningful participation », *Climate Policy* 11: 731-751.
- **Guivarch**, C., Crassous, R., Sassi, O., Hallegatte, S. 2011. « The costs of climate policies in a second best world with labour market imperfections ». *Climate Policy* 11: 768-788.
- Rozenberg, J., Hallegatte, S., Vogt-Schilb, A., Sassi, O., **Guivarch**, C., Waisman, H., Hourcade, J.-C. 2010. « Climate change and energy security: climate policies as a hedge against the uncertainty on future oil supply ». *Climatic Change* 101(3-4) : 663-668.
- Sassi O., Crassous R., Hourcade J.-C., Gitz V., Waisman H., **Guivarch** C., 2010. Imaclim-R: a modelling framework to simulate sustainable development pathways, *International Journal of Global Environmental Issues*, Special Issue on Models for Sustainable Development for Resolving Global Environmental Issues: Vol. 10, Nos. 1/2, pp.5-24.
- Mathy, S., C. **Guivarch**. 2010. « Climate policies in a second-best world - A case study on India. » *Energy Policy* 38(3) : 1519-1528.
- **Guivarch**, C., S. Hallegatte, R. Crassous. 2009. « The resilience of the Indian economy to rising oil prices as a validation test for a global energy-environment-economy CGE model. » *Energy Policy* 37(11) : 4259-4266.

Opinion pieces

- **Guivarch**, C., A. Mejean, A. Pottier, M. Fleurbaey. 2016. « Social cost of carbon: global duty ». *Science* 351 (6278): 1160-61.
- Boucher, O., V. Bellassen, H. Benveniste, P. Ciais, P. Criqui, C. **Guivarch**, H. Le Treut, S. Mathy, R. Sférian. 2016. « Opinion : In the wake of Paris Agreement, scientists must embrace new directions for climate change research ». *PNAS* 113 (27) : 7287-7290.

Working papers

- Taconet, N., C. **Guivarch**, A. Pottier. 2019. “Social Cost of Carbon under stochastic tipping points: when does risk play a role?”. FAERE-French Association of Environmental and Resource Economists Working Papers 2019.11.
- **Guivarch**, C. and Rogelj, J. 2017. « Carbon price variations in 2°C scenarios explored », background paper for the Report of the high-level commission on carbon prices.
- Tavoni, M., Bosetti, V., Shayegh, S., Drouet, L., Emmerling, J., Fuss, S., Goeschl, T., **Guivarch**, C., Lontzek, T., Manoussi, V., Moreno-Cruz, J., Muri, H., Quaas, M., Rickels, W. 2017. « Challenges and Opportunities for Integrated Modeling of Climate Engineering ». *FEEM Working Paper* No. 38.2017.
- Wilson, C., Krieglner, E., van Vuuren, D.P., **Guivarch**, C., Frame, D., Krey, V., Osborn, T.J., Schwanitz, V.J. & Thompson, E.L. 2017. Evaluating Process-Based Integrated Assessment Models of Climate Change Mitigation. *IASA Working Paper* WP-17-007.
- Giraudet, G., **Guivarch**, C. 2016. « Global warming as an asymmetric public bad ». FAERE Working Paper, 2016.26.
- Audoly, R., Vogt-Schilb, A., **Guivarch**, C. 2014. Pathways toward Zero-Carbon Electricity Required for Climate Stabilization. *World Bank Policy Research Working Paper* 7075.
- Demailly, D., Chancel, L., Waisman, H., **Guivarch**, C. 2013. A post-growth society for the 21st century. Does prosperity have to wait for the return of economic growth?, *Iddri Studies* n°08/13, Iddri, Paris, France.

Conference proceedings

- Trutnevyte, E., **Guivarch**, C. 2014. Innovative techniques for quantitative scenarios in energy and environmental research: a review. In: Ames, D. P., Quinn, N. W. T., Rizzoli, A. E. (Eds.), 7th International Congress on Environmental Modelling and Software Proceedings, 15-19 June 2014, San Diego, USA.
- **Guivarch**, C., Schweizer, V., Rozenberg, J. 2014. Enhancing the policy relevance of scenarios through a dynamic analytical approach. In: Ames, D. P., Quinn, N. W. T., Rizzoli, A. E. (Eds.), 7th International Congress on Environmental Modelling and Software Proceedings, 15-19 June 2014, San Diego, USA.

Chapters in books

- **Guivarch**, C., Rozenberg, J., Cassen, C. and Hourcade, J.C. 2014. 'Energy, Environment and Sustainable Globalisation', in (Eds) J. Eatwell, T. McKinley and P. Petit, *Challenges for Europe in the World, 2030*, Ashgate, UK.
- **Guivarch**, C. and H. Heidug, 2013. Bioenergy with carbon capture and storage: the negative emission concept, in Electricity in a Climate Constrained World 2012 - Data and analyses, International Energy Agency, OECD/IEA Publications, Paris, France.
- (in french) **Guivarch**, C., Hallegatte, S. 2012. '2°C or not 2°C', in Le Livre Blanc Climat 2012, L'entreprise, les politiques et les citoyens face au changement climatique, 12 visions d'experts (Eds. O. Guy).
- **Guivarch**, C., Hood, C. 2011. 'Early retirement of coal-fired generation in the transition to low-carbon electricity systems', in Climate and electricity annual 2011- Data and analyses, International Energy Agency, OECD/IEA Publications, Paris, France.
- (in french) Hamdi-Cherif, M., **Guivarch**, C., Quirion, P. 2011. 'Une approche sectorielle pour la production d'électricité dans les pays en développement: enseignements du modèle Imacim-R', in *Economie du climat, pistes pour l'après-Kyoto* (Eds. Godard, O. and J.P. Ponsard), Les éditions de l'Ecole Polytechnique, Palaiseau, France.

Research projects

- NAVIGATE Next generation of AdVanced InteGrated Assessment modelling to support climaTE policy making H2020 project (2019-2023) (coordinator for Cired)
- French Interdisciplinary Group on Nationally Determined Contributions (co-PI) (2015 –...)
financed under an ADEME grant and MTES Climate Services Convention
- DEEDS DialoguE on European Decarbonisation Strategies (contributor) (2017 - ...)
European project H2020
- Investment needs for transport infrastructure along low-carbon pathways (2016-2017) (PI)
World Bank project

- ADVANCE Advanced Model Development and Validation for the Improved Analysis of Costs and Impacts of Mitigation Policies (2013 – 2016) (coordinator for Cired)
European project FP7
- Sustainable Mobility Institute, Global Vision (2010 – 2017) (PI)
Three consecutive research projects. Topics on long-term mitigation strategies, on technological choices under uncertainty and inertia, on electric vehicles, on fuel poverty. The Sustainable Mobility Institute is a partnership between Renault Foundation and ParisTech.
- (in french) ELIPSE « Evaluer Les Interactions entre Politique climatique et Sécurité énergétique en Europe » (2011-2012) (co-PI)
Conseil Supérieur de la Formation et de la Recherche Stratégique
- Short-Term / Long-Term Coherence of Emissions Reduction Pathway (2010) (PI)
Climate Strategies
- AUGUR, Challenges for Europe in the World, 2030 (2009-2013) (coordinator for Cired)
European project FP7

Conferences and research visits

Invited presentations

- Conférences Olivier Legrain Sciences et Sociétés 2019. Le dérèglement climatique : défi mondial, approches sociales. Session « Autour des scénarios du GIEC ». ENS, 8 juillet 2019.
- Forum interdisciplinarité | À la croisée des sciences. Changement climatique et interdisciplinarité. Université Fédérale de Toulouse Midi-Pyrénées, 9 janvier 2019.
- Four dilemmas for an economy-energy-environment modeler, Journées doctorales ABIES, 15 avril 2016.
- « Modeling Climate Impact on Economic Growth: More Harm, More Uncertainty or None of the Above? Numerical Experiments and Implications for Mitigation Policy », Princeton, Climate Futures Initiative, Spring 2015 seminar series, April 22, 2015.
- Invited speaker at the Alliance Summer School in Science and Policy 2014, « Climate Change Research: The Nexus of Natural and Social Science », Paris, July 2014.
- "Recent work at Cired in the Framework for the Development of New Socio-economic Scenarios for Climate Change Research", Science for Energy Scenarios, Ecole de Physique des Houches, February 2-7, 2014.

Research visits

- Princeton, Princeton Environmental Institute (Robert Socolow and Marc Fleurbaey) (2015) (10 days)
- National Center for Atmospheric Research, Boulder (V. Schweizer and B. O'Neill), Advanced Study Program (2012) (2 weeks)

Organization of conferences and sessions

- Preparatory workshop to COP21 on INDC evaluation: Boucher, O., H. Benveniste, and C. Guivarch (2016), Nations' pledges to reduce emissions and the 2°C objective, Eos, 97.
- Session « Scenarios, public deliberations and decisions », Our common future under climate change conference, Paris, July 7-10, 2015. co-convenor of the session.
- Co-organizer (with E. Trutnevte) of the UCL-Cired workshop IQ SCENE: Innovative techniques for Quantitative SCenarios in ENergy and Environmental research, London, 26-27 March 2014.

Communications

- 2019 : conférence Legrain ENS, séminaire Koyré, séminaire DDX, forum interdisciplinarité Université de Toulouse
- 2018 : Cobham behavior modelling workshop, séminaire Energie des Houches
- 2017: Ecole Polytechnique, Agence Française de Développement, Modeling for Sustainable Development Chair

- 2016 : Integrated Assessment Modelling Consortium 9th annual conference (Beijing), FEEM, Modeling for Sustainable Development Chair, CEPII
- 2015: Integrated Assessment Modelling Consortium 8th annual conference (Potsdam), Our Common Future under Climate Change conference (Paris), AFSE annual conference (Rennes), CEREGE-AMU, Princeton Climate Future Initiative seminar series
- 2014: European Economic Association Congress (Toulouse), World Congress of Environmental and Resource Economists (Istanbul), LIED, RAND (Santa Monica), international Environmental Modelling & Software society conference (San Diego), UCL Energy Institute, Maison des Sciences de l'Homme Paris
- 2013: Ecole des Mines ParisTech, International Energy Workshop (Paris), GTAP annual conference (Shanghai), European Sustainable Energy Week, UCL Energy Institute
- 2012: Planet Under Pressure conference (London)
- 2010: World Congress of Environmental and Resource Economists (Montreal)
- 2009: International Scientific Congress on Climate Change (Copenhagen), Conference on the International Dimensions of Climate Policies (University of Bern)
- 2007: International Energy Workshop (Stanford)

Expertise

- Member of the French Climate Change Committee (Haut conseil pour le climat)
- Member of the French Sustainable Development Economic Council.
- Member of the French delegation to the 31st (Bali, 2009) and 39th (Berlin, 2014) IPCC General Assembly.
- Expert for the « Climate change modelling information » project, European Commission DG Climate Action (2014-2016).

Teaching

- Organizer and faculty of Cired 2nd International Summer School in Economic modelling of Environment, Energy and Climate, Topic "The role of demand and lifestyles in low carbon pathways", Paris, 2018 July 2-6.
- Organizer and faculty of Cired 1st International Summer School in Economic modelling of Environment, Energy and Climate, Topic "Modelling approaches to assess NDCs and mid-century strategies", Paris, 2017 July 4-8.
- Conferences on Climate Change and solutions in the Executive Education program LEAD Academy (Lean, Experience, Adapt, Disrupt), Ecole Polytechnique – PwC– Google (2017, 2018, 2019)
- Courses in environmental and resources economics and modelling, and in climate change economics, Ecole des Ponts ParisTech and other top-level engineering schools.
- Courses on scenarios for climate change research and decisions, ENS Ulm and Ecole Nationale de la Météorologie.

PhD supervision

- Nicolas Taconet (2017-...) - Evaluation des dommages macroéconomiques du changement climatique
- Vivien Fisch Romito (2017-...) - Le rôle des infrastructures pour répondre au double défi du développement et de l'atténuation du changement climatique
- Juan Vera Molina (2015-...) - Choix de technologies bas CO2 dans l'industrie automobile: effets d'inertie de l'écosystème et incidence des politiques publiques (co-supervision with Franck Lecocq)
- Audrey Berry (2014-2018) - Essais sur la précarité énergétique : mesures multidimensionnelles et impacts de la fiscalité carbone (co-supervision with Philippe Quirion)
- Manon Solignac (2012-2018) - Véhicule électrique et forme urbaine : une évaluation prospective (co-supervision with Franck Lecocq)

Outreach and media (mostly in French)

Médiation scientifique

- Festival l'Economie aux rendez-vous de l'Histoire de Blois. Membre du conseil scientifique (2017-...). Organisation d'une table ronde "Égax par nature ? Inégalités et environnement d'hier à demain" (2018).

- Le Train du Climat : un nouveau train pour un nouveau projet ! (avec S. Planton, A. Crette, C. Cassou, E. Guilyardi, C. Jeandel, B. Korc). Commissariat scientifique de l'exposition avec Christophe Cassou.
- Le dérèglement climatique vu par..., UniverscienceTV.
- Participation au train du climat, événement national de la fête de la science 2015. EMS Outreach & Communication Award 2017.
- Contribution au site "Le Climat en Questions": Comment les scénarios climatiques prennent-ils en compte les options économiques de nos sociétés ?.

Médias

- Ideas for development ID4D. Climate change impacts the fight against inequalities.
- The Conversation. France and Britain in a race for carbon neutrality by 2050. With C. Le Quéré.
- The Conversation. Paris et Londres se lancent dans la course à la neutralité carbone pour 2050. Avec C. Le Quéré.
- The Conversation. COP24 : le nouveau contexte scientifique des négociations climat. Avec Q. Perrier et O. Boucher.
- HuffingtonPost. Les pistes pour respecter l'Accord de Paris (et où trouver l'argent). Avec Q. Perrier, O. Boucher, J.-C. Hourcade.
- The Conversation. Lutter contre les changements climatiques : pourquoi est-ce si compliqué ?. Avec Q. Perrier, O. Boucher, P. Criqui, P. Ciais, H. Le Treut, T. Lebel, J.-C. Hourcade, F.-M. Bréon, S. Mathy, H. Benveniste.
- Co-signature avec un groupe interdisciplinaire d'une tribune dans le Huffington Post: Les contributions nationales soumises à la COP21 appellent à une révision et un suivi des émissions.
- Co-signature avec un groupe interdisciplinaire d'une tribune dans le Monde: COP21 : Pour rejoindre rapidement une trajectoire limitant le réchauffement à 2°C

Academic service

- Reviewer for Nature Communications, Climate Change Economics, Climate Policy, Climatic Change, Comptes rendus Geoscience, Ecological Economics, Economie et Prévision, Energy Policy, Global Environmental Change.
- Grant reviewer for ANR (the French National Research Agency) and ADEME (the French Environment and Energy Management Agency)
- Examiner for Yann Quilcaille PhD thesis (2018) "Revisiting emissions and climate scenarios with a compact Earth system model"
- Referee for Thomas Le Gallic PhD thesis (2017) « Thinking our future lifestyles in energy foresight approaches: proposal for a modelling approach ».
- Examiner for Roberto Feirera da Cunha PhD thesis (2017) "Unconventional Oil and Natural Gas Supplies and the Mitigation of Climate Change"

Affiliations

- French Association of Environmental and Resources Economists
- European Association of Environmental and Resources Economists
- Météo et Climat