

Open Master 2 Internship Position at CRAN Nancy (UMR CNRS – Univ. Lorraine)

Main contact : Dr Samson LASAULCE.

Samson.lasaulce@univ-lorraine.fr

Place: the research project will be conducted within the CO2 team of the CID Research Department at CRAN, Nancy, France.

http://www.cran.univ-lorraine.fr/anglais/themes_rech/cid/index.php

Key people: the main advisor will be Dr Samson Lasaulce, Director of Research with CNRS. The intern will also work with Bouchra Mroué, Ph.D student at CRAN and Professor Constantin Morarescu. The student will be encouraged to interact with other researchers working on game theory in the CO2 team such as Dr Vineeth Varma and Dr Jomphop Veetaseveera.

Duration: 5 – 6 months.

Salary: 600 E/months.

Topic: The problem addressed in this project is the problem of agreements for managing issues related to climate changes. Our scientific point of view is original in the sense that it combines mathematical tools from game theory, dynamical systems, and economics. Our goal is twofold. First, we want to model and understand the decision process associated with the CO2 emission policies taken by the governments. Second, we want to design some agreement and cooperation mechanisms that will be effectively implemented by the governments. The Master student will first review the existing models and in particular master a model used by the Ph.D student Bouchra Mroué (the DICE model) . Then, the student will develop a stochastic game model to model the decision process associated with Conference of Parties and derive robust collaborative emission policies.

Related references:

William D. Nordhaus : Revisiting the social cost of carbon. Proceedings of the National Academy of Sciences, 114(7):1518–1523, 2017. ISSN 0027-8424.

URL <https://www.pnas.org/content/114/7/1518>

William Nordhaus et Paul Sztorc : DICE 2013R : Introduction and User's Manual. 10 2013. URL <https://sites.google.com/site/williamdnordhaus/dice-rice>.

Christopher M. Kellett, Steven R. Weller, Timm Faulwasser, Lars Grüne et Willi Semmler : Feedback, dynamics, and optimal control in climate economics. Annual Reviews in Control, 47:7–20, 2019. ISSN 1367-5788.

URL <https://www.sciencedirect.com/science/article/pii/S136757881830213X>.