CE² Conference on Econometrics for Environment

2nd Conference on Econometrics for Environment

CE²-2018

https://sites.google.com/site/ce2conference/home

ce2.fpn2018@gmail.com

Hosted by the

The Pluridisciplinary Faculty of Nador (PFN), Morocco

and jointly organized by:

- ***The PFN (MASI Laboratory and ERPT research team), Morocco;***
- ***The Faculty of Law, Economics and Social Sciences-Souissi (LEAM Laboratory), Mohammed V University in Rabat, Morocco;***
- ***Lille Laboratory of Economics and Management (LEM), University of Lille, France;***
- ***UMR Economie Publique, INRA-AgroParisTech, France;***
- ***The National Institute of Statistics and Applied Economics (INSEA), Morocco;***
- ***Association Marocaine des Sciences Régionales (AMSR) and***
- ***Renewable Energy University Network (REUNET).***

with partnership of

and media partner

Mohamed Atounti, Coordinator of the Local Organizing Committee, PFN, Nador.

Ahmed El Ghini, Coordinator of the CE² Conference, Mohammed V University in Rabat.

Content

Welcome

DEAR PARTICIPANT,

Following the success of the First CE²-2016 conference in Rabat and Marrakech, the Organizing Committee is very pleased to welcome you for the CE²-2018 second meeting hosted by the Pluridisciplinary Faculty of Nador on December 19-21, 2018. The aim of this scientific event is to provide a forum for presenting new research results as well as discussing current and challenging issues in econometrics for environment and related topics in economics and environmental sciences.

The program of the Symposium will run over two days (December 19-20, 2018) and comprises plenary, oral and poster sessions designed to promote exchanges between academics, practitioners and policymakers in large domains including the privileged themes of this scientific meeting. The third day of December 21st is devoted to training courses in particular for Master/PhD students; and a social activity including a visit of Marchica as an important environmental project in the City of Nador.

We wish you a fruitful and stimulating time at the conference, and hope you will enjoy your stay in Nador! If you have any questions, please feel free to contact us.

Ahmed El Ghini, Coordinator and the founding chair of the CE² conference.
Rabat, December 17th, 2018.

2nd Conference on Econometrics for Environment (CE²-2018)

Since the Industrial Revolution to the 1970s of the last century, the world mainly focused on industrialization and economic development without giving too much importance to the environment. However, the oil shocks of the 1970s raised awareness of the danger of natural resource depletion and the risk of energy shortages. Added to this was the advent of economic theories/currents that made the close link between the economy and the environment.

In addition, in 1972 the Club of Rome published a report entitled "Limits to growth" in which it was concluded that continued economic growth (in the countries of the North) would lead in the medium term to a sharp drop in the quality of life of the population as a result of pollution, the depletion of arable land and the depletion of fossil resources. In the same years, the Stockholm Conference on the Environment, organized by the United Nations, focused on the links that can be established between ecology and economy and the conditions that must be included in a development model compatible with environmental protection and social equity. Moreover, the second report of the Intergovernmental Panel on Climate Change (IPCC) in 1995 was the first scientific report to clearly identify the involvement of anthropogenic activities in the environment. This paved the way for a myriad of annual Conferences of the Parties (the signing of the Kyoto Protocol in 1998, the signing of the Paris Agreement in 2015, the United Nations Climate Change Conference in 2016 in Marrakech and in 2017 in Bonn), which represented an important turning point in international awareness of the risks associated with the environment and the crucial need for its protection.

Climate change and the environmental impacts of economic growth are now undeniable realities that all countries must take into account when formulating their sectoral policies and development strategies. Indeed, all economic sectors increasingly require the environmental dimension to be taken into account. In addition, the acceleration of extreme weather events and the worsening scale of natural disasters have significantly affected human activities and territorial planning. Such a reality raises questions about the challenges of environmental impacts and the various vulnerabilities associated with climate change with a view to finding adequate, effective and sustainable solutions to deal with these changes, which are taking place from a global change perspective. Thus, these problems require in-depth economic studies based on relevant statistical and quantitative analysis instruments. Environmental Econometrics, an emerging field of research, focuses on environmental issues using econometric and statistical methods ranging from the analysis of observed environmental and econometric data that provide quantitative estimates of the socio-economic impacts of environmental/climate variables. In this perspective, the International Conference on Environmental Econometrics "CE^2" aims to promote a multidisciplinary approach to strengthen research and interactions between environmental sciences and econometrics/statistics.

The Pluridisciplinary Faculty of Nador (PFN), part of Mohammed Premier University in Oujda, attaches major importance in its policy of openness to congresses and scientific activities likely to complete the training process and promote scientific research and innovation. The Faculty has taken it upon itself to open up to its socio-cultural environment and to ensure its influence while encouraging national and international cooperation.

It is therefore with this objective in mind that the second edition of the ***"International Conference on Environmental Econometrics"***, hosted by the ***PFN*** and jointly organized on **19 and 21 December 2018** by:

- ***The PFN (MASI Laboratory and ERPT research team), is taking place;***
- ***The Faculty of Law, Economics and Social Sciences-Souissi (LEAM Laboratory), Mohammed V University in Rabat;***
- ***Lille Laboratory of Economics and Management (LEM), University of Lille, France;***
- ***UMR Economie Publique, INRA-AgroParisTech, France;***
- ***The National Institute of Statistics and Applied Economics (INSEA);***
- ***Association Marocaine des Sciences Régionales (AMSR)*** and
- ***Renewable Energy University Network (REUNET).***

The following privileged themes are not exhaustive and include methodological/applied works on:

- ***Economic growth in relation to the environment and more particularly climate change;***
- ***Renewable energies and sustainable development;***
- ***Impacts of climate change on agriculture;***
- ***Environmental risk impact assessment;***
- ***Modeling land use changes and their impacts on the environment (greenhouse gas emissions, biodiversity conservation, water quality, etc.);***
- ***Innovative financing for sustainable development;***
- ***Environmental taxation and ecological transition;***
- ***Challenges biodiversity conservation;***
- ***Environmental Policy Assessment;***
- ***Socio-economic and environmental impacts of the implementation of new activities;***
- ***Determinants of land-use and land-cover change;***
- ***Energy transitions and energy system efficiency modeling;***
- ***Time series modeling and statistics of extremes with applications to Environmental data analysis;***
- ***Spatial statistics and analysis of massive, functional climatic/environmental data.***

Note that this conference is a part of the activities expected in the framework of the collaborative project (2018-2020) on economic growth and environment between Mohammed V University in Rabat and the University of Lille in partnership with UMR Economie Publique, INRA-AgroParisTech and the Swedish University of Agricultural Sciences (Sweden) and supported by MESRS (CNRST-Morocco) and IFM (France).

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Mohamed ATOUNTI, FPN, Nador, Morocco.
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Sophie DABO, Université de Lille, France.
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Mohammed EL HAJ TIRARI, INSEA, Rabat, Morocco.
Mourad ZENASNI, FPN, Nador, Morocco.
Anne-Françoise YAO, Université Blaise Pascal, France.

Invited Speakers

- ***Belkacem Abdous, INSEA, Rabat, Morocco***

Short Biography: He is Director of Statistics Directorate at the High Commission for Planning (HCP) and Director of the National Institute of Statistics and Applied Economics. After spending over 25 years working as a researcher and a full professor of statistics/biostatistics at Laval University and the Université du Québec à Trois-Rivières, Québec, Canada, Belkacem joined the HCP, where he is strongly involved in the production of official statistics in Morocco together with various national and international statistical activities and projects.

Throughout his career, Belkacem has been a researcher at the Montreal Mathematic Research Centre, a member of the Statistical Society of Canada, the Institute of Mathematical Statistics (IMS) and the International Statistical Institute (ISI).

Talk:

Title: "On some statistical methods in public health and environmental related problems"

Résumé :

Il est bien connu que la biostatistique et l'épidémiologie constituent la clef de voûte de la recherche en santé. En particulier, les questions de recherche ayant trait aux changements climatiques et leurs effets sur la santé humaine reposent sur une multitude de concepts statistiques.

Dans cet exposé, nous nous limiterons à deux problématiques particulières, à savoir les liens entre les conditions météorologiques et les maladies cardiovasculaires (MCV) d'une part et l'influence des facteurs sociaux-économiques sur l'adaptation aux changements climatiques d'autre part

Nous montrerons comment des approches statistiques telles la régression quantile, la théorie des valeurs extrêmes, les modèles multi-niveaux et les analyses de correspondance multiple peuvent apporter des éléments de réponse à la compréhension et l'analyse de ces questions de santé publique.

- ***Mustapha Ayaita, REUNET, Rabat, Morocco***

Short Biography: International Speaker Expert in Renewable Energies. President of the REUNET University Network.

Talk:

Title: "Quel futur énergétique pour le Maroc à l'horizon 2050 ?"

Abstract: Pays en fort développement, le Maroc est à présent fortement dépendant des importations énergétiques, notamment celle des combustibles fossiles (pétrole, gaz et charbon). Près de 90 % de l'énergie utilisée provient de l'étranger. Ceci pèse lourdement sur la balance des paiements et, dans la mesure où certaines fournitures d'énergie sont subventionnées, sur le budget de l'État.
En raison de l'évolution de l'industrialisation, du développement global de l'économie et de l'augmentation du niveau de vie dans le pays, la demande en énergie croit de 6-7 % par an en moyenne.
Cette dépendance vis-à-vis des importations soulève aussi la question de la sécurité d'approvisionnement énergétique, alors que l'utilisation de ces combustibles fossiles maintient un niveau relativement élevé d'émissions de gaz à effet de serre (GES).
Le Maroc partage donc nombre des défis énergétiques auxquels sont confrontés la plupart des pays du monde, à savoir, comment garantir à la fois la sécurité d'approvisionnement et le respect de l'environnement. Pour répondre à ces enjeux, les autorités marocaines ont mis en place une stratégie volontariste et ambitieuse, dont le principal pilier est le développement des énergies renouvelables. La part de celles-ci va passer à 42 % en 2020 et 52 % en 2030 dans la capacité de production électrique totale du pays.
D'un autre côté, le potentiel des ressources en énergies renouvelables au Maroc (solaire, éolien, biomasse, géothermique, hydraulique, énergie des mers, …) est largement suffisant pour répondre à l'intégralité des besoins énergétiques du pays. L'exploitation intelligente de ce potentiel pourrait permettre au Maroc de se passer complètement des énergies fossiles importées, de contribuer à la protection de l'environnement et de créer de nouvelles richesses. Cependant, certaines des technologies nécessaires pour atteindre cet objectif doivent encore faire l'objet de perfectionnement et de réduction des coûts. Un immense effort de recherche, de développement et de démonstration est donc nécessaire, tant dans le secteur privé que public.
C'est dans ce contexte que la modélisation prospective devient nécessaire pour les chercheurs.
Ma conférence s'articule autour de trois parties :

1. Aperçu de la situation énergétique mondiale et nationale
2. Stratégie énergétique du Maroc à l'horizon 2030
3. Modélisation d'un futur électrique 100% renouvelable au Maroc à l'horizon 2050 : défis scientifiques, technologiques et économiques.

- ***Raja Chakir, INRA-AgroParisTech, France***

Short Biography: Raja Chakir holds a degree in statistician engineering from INSEA in Morocco and a PhD in economics from Toulouse School of Economics in France. His thesis work focused on estimating energy demand with panel econometric models. After postdocs at the LSE and at the CNRS, she was recruited as researcher at INRA in 2005 and promoted as research director in 2018. Her research focuses on spatial econometric analysis of land uses and their impacts on the environment with a particular focus on climate change, loss of biodiversity and water quality. She teaches environmental econometrics and methods of environmental goods evaluation inAgroParisTech's Master2 EDDEE, University Paris 1 - La Sorbonne Master 1 Environmental Economics and Sustainable Development and in OCPPC's Advanced Training in Agricultural Economics and Environment. She has participated in several ANR and European research projects, she also carried out consulting for the World Bank and ADEME.

Talk:

Title: "Spatial econometric analysis of land use and climate change" (with Anna Lungarska (INRA))

Abstract: Interaction between mitigation and adaptation is a key question for the design of climate policies. In this paper, we study how land use adaptation to climate change impacts land use competition in the agriculture, forest and other land use (AFOLU) sector and how a mitigation policy in agriculture might affect this competition. We use for this purpose two sector-specific bio-economic models of agriculture and forest combined with an econometric land use shares model to simulate the impacts of two climate change scenarios (A2 and B1, 2100 horizon), and a greenhouse gas emissions from agriculture policy consisting of a tax of between 0 and 200 €/tCO2 equivalent. Our results show that both climate change scenarios lead to an increase in the area devoted to agriculture at the expense of forest which could have a negative impact on reducing greenhouse gas emissions responsible for climate change. The mitigation policy would curtail agricultural expansion, and thus could counteract the effects of land use adaptation to climate change. In other words, accounting for land use competition results in a reduction of the abatement costs of the mitigation policy in the agricultural sector.

- ***Sophie Dabo, University of Lille, France***

Short Biography: Sophie Dabo-Niang is professor of Applied Mathematics (Statistics) at University of Lille, laboratory LEM CNRS 9221 and member of INRIA-MODAL team. She completed a 3-years PhD in Statistics from the University Paris 6 in 2002. She is chair of the axis MeQAME (Quantitative methods in Management and Economics) of LEM and vice-chair of EMS-CDC (European Mathematical Society-Committee of Developing Counties; http://euro-math-soc.eu/committee/developing-countries). Dr. Sophie Dabo-Niang research program is focused on the study of non(semi)-parametric inference of functional and spatio-temporal data. From an applied perspective, she is interested in economics, medical, environmental and hydrological studies. She published more than forty statistical papers.

Talk:

Title: "Bridging Functional Data Analysis and Spatial Data Modeling"

Abstract: Spatial statistics includes any (statistical) techniques which study phenomenons observed on spatial sets. Such phenomenons appear in a variety of fields: epidemiology, environmental science, physics, econometrics, image processing and many others. The modelization of spatial data is among the most interesting research subjects in dependent data analysis. This is motivated by the increasing number of situations coming from different fields of applied sciences for which the data are of spatial nature. This is the case for instance in epidemiology, where data are often spatial or space-time, and so spatial location can acts as a surrogate for risk factors. Complex issues arise in spatial analysis, many of which are neither clearly defined nor completely resolved, but form the basis for current researches. This is the case of functional data analysis techniques, which incorporate spatial dependency. We are interested here in semi(non)-parametric spatial regression estimation. More precisely, we estimate regression functions where the explanatory variable is real-valued while covariates are functional random fields. Asymptotic results of the proposed estimator are established. The skills of the methods are illustrated on simulations and real data analysis.

- ***Ahmed El Ghini, Mohammed V University in Rabat, Morocco***

Short Biography: Ahmed El Ghini is currently an Associate Professor of Econometrics at the Faculty of Law, Economics and Social Sciences (Souissi) in Rabat, Morocco. He has been a Researcher at the National Center for Scientific Research (CNRS) of France, where he was involved in many national and international research projects, and previously an Assistant for Teaching and Research with the EQUIPPE Laboratory "Economie Quantitative, Intégration Politiques Publiques et Econométrie" of the Université Lille Nord de France. He holds a PhD and an MA in Applied Mathematics and Economics from Charles de Gaulle University - Lille 3, and "Diplôme d'Etudes Approfondies" in pure mathematics from Lille 1 University, France and graduated in mathematics from the Faculty of Sciences of Oujda in Morocco. His teaching experiences include probability, statistics, econometrics and financial mathematics at many universities and engineering schools in France and Morocco. His research interests focus on time-series modeling, econometrics, statistics and their applications in economics, environment, energy and finance. El Ghini's research work is published in peer-reviewed journals and presented at several international conferences.
Ahmed is the coordinator and founding chair of 2 periodic international conferences:
Days of Econometrics for Finance (JEF: https://sites.google.com/site/jefconference/JEF_2018) and the Conference of Econometrics for Environment (CE^2).
Dr. Ahmed El Ghini awarded many distinctions, in particular "Prix du meilleur chercheur de l'année 2015" in Humanities and Social Sciences from Mohammed V University in Rabat.

Talk:

Title: Round Table on "Economic growth and some related environmental issues in developing economies: Empirical evidences" (with Raja Chakir, Sophie Dabo and George Marbuah)

- ***Nuno Figueiredo, University of Coimbra, Portugal***

Short Biography: Researcher at the University of Coimbra in the Energy for Sustainability initiative and INESCC, he holds a Ph.D. in Sustainable Energy Systems from the University of Coimbra (UC) and a MBA from Porto Business School. His research interests, are in the areas of energy economics, energy markets and sustainable energy systems. He is author of articles in international peer-reviewed journals and conferences, and also a founding member of the Portuguese Association for Energy Economics. He is the Operations Manager in a combined cycle gas turbine power plant, representing Trustenergy (a joint venture between Engie and Marubeni).

Talk:

Title: "Interconnection congestion determinants: the Iberian case" (with Patrícia Pereira da Silva and Pedro A. Cerqueira)

Abstract: Cross-border interconnection infrastructure is fundamental to optimise daily production, increase the opportunities for operation with renewable energies, promote the competition and enhance the security of supply. The management of limited cross-border interconnections capacity constitutes a challenge, in particular if extensive renewable energy generation is available.

The probability of cross-border interconnection congestion is inhere estimated through the use of non-parametric models, as a function of wind and hydro power, together with the available transmission capacity and electricity demand. The congestion of the cross-border interconnections prevents further optimization of available renewable resources.

- ***Ghislain Geniaux, INRA, Avignon, France***

Short Biography: Since 1999, I'm Researcher in Ecodevelopment unit (Avignon, France) UR767, INRA and lead the UbanSIMUL Team (https://urbansimul.fr). My Research area is on Land markets and land policy, Evaluation of territorial policies, Land Use Change models and Spatial Econometrics. I managed since 2001 various research programs on land markets dynamics, on land use change modeling, and on evaluation of impact of rural/land public policy.

I also manage the URBANSIMUL project (2009-2014, 2015-2020 https://urbansimul.fr/urbansimul/presentation.php) that contributes to the development of a server tools on land use management and land-use changes analysis.

Talk:

Title: "A space-time-categorical local linear smoother for predicting house prices, followed by a R session on how to use the R package mgwrsar" (with Davide Martinetti)

Abstract: We recently introduced a new class of data generating processes called MGWR- SAR, in which the regression parameters and the spatial dependence coefficient can vary over the space in order to take into account both spatial heterogeneity and spatial dependence (Geniaux and Martinetti, 2017, R package mgwrsar). The estimator corresponds to a local linear smoother (Cleveland, 1979) with a spatial kernel based on Euclidian distance between observations and a linearization of SAR regression using IV/2SLS method. We propose to improve these DGPs by adding a General Product Kernel that allows to introduce further smoothed variables to go beyond spatial heterogeneity. Firstly, "time" variable to consider space/time heterogeneity and, secondly, a categorical variable to test the relevance of "ad hoc" market segmentations. The objective is to fit an even smoother regression model capable of predicting house prices while accounting at the same time for space-time dependencies and housing submarkets. We apply the new estimators to a comprehensive spatial longitudinal database on house sales in the Southeastern French region of PACA. We show that these estimators are more accurate than models integrating exclusively spatial heterogeneity or spatial autocorrelation, based on a comparison of the predictive accuracy of the best linear unbiased prediction (BLUP). The R script related to this article will be commented during the second part of the talk, and an introduction to the mgwrsar package will be proposed.

- ***Abdellatif Khattabi, ENFI, Salé, Morocco***

Short Biography: Agronomic Engineer from Institut Agronomique et Vétérinaire Hassan II, Rabat (1981), and Ecole Supérieure du Bois, Paris France(1980). Master of Sciences (1988) in economics and PhD in Forestry (19992) from the University of Idaho, USA. Master of Sciences in ICT, University of Louis Pasteur, Strasbourg, France (virtual campus). Full Professor at Ecole Nationale Forestière d'Ingénieurs since 1994, and visiting professor to many universities. Research Fellow in the Royal Institute of Strategic Studies (IRES), Morocco, and in the Institute for Labor Studies (IZA), Germany. His recent research interests deal with integrated natural resources management, environmental assessment, climate change adaptation, and rural development. Author of many publications (book chapters, scientific papers, expertise reports, outreaching documents, etc.), recipient of numerous research grants and consultant for international organizations (UNESCO, ISESCO, UNDP, UNEP, World Bank, FAO, GIZ, ..) and national public and private institutions. Fulbright Alumni, president of the Regional Science Association of Morocco. Lead author for the IPCC fifth report, chapter 5 (coastal zones and low lying areas).

Talk:

Title: "Analysis of the cost of environmental degradation in coastal zones"

Abstract: The major environmental concerns in coastal zones in Morocco are related to the rapid urbanization, the direct discharge of industrial and household solid waste into the sea, the degradation and disappearance of natural resources (wetlands, forests, coastal ecosystems, etc.), destruction of coastal dunes, erosion in sandy beaches, etc. An important cost of environmental degradation will result from these issues. The costs will concern health losses related, water quantity and quality degradation, air pollution, loss of fish captures, loss of amenities, loss of tourism opportunities, loss of biodiversity and many ecosystem services. Evaluation of the cost (degradation, damage) of environmental impact aims to associate monetary values with these impacts. This paper deals with the identification of various costs and methodologies to compute them in order to inform the decision-making processes.

- ***George Marbuah, SLU, Sweden***

Short Biography: A post-doctoral researcher at the Department of Economics, Swedish University of Agricultural Sciences in Uppsala, Sweden where he obtained his PhD in Economics. His primary research interests are in empirical macroeconomics, development economics and policy-oriented issues with applications to understanding public debt, economic growth and inflation dynamics among others. He is also interested in research at the intersection between the macroeconomy, environment and natural resources management in sub-Saharan Africa and developing economies' contexts in general. He has accumulated about a decade's experience in applied economic and policy research as well as teaching in and outside of the academia with a demonstrated track-record of peer-reviewed technical reports and journal article publications.

Talk:

Title: "Spatial analysis of emissions in Sweden" (with Amuakwa-Mensah, F.)

Abstract: This paper contributes to the environmental Kuznets curve (EKC) literature, which posits an inverted U-shaped relationship between pollution and income, but from a spatial perspective. We explore several spatial statistical and econometric analyses to account for spatial dependence in emissions from carbon dioxide, sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter (2.5 and 10) and total suspended particulates between all 290 Swedish municipalities. Our results suggest the EKC significantly holds for all but one pollutant (i.e. carbon monoxide) and that this relationship is significantly characterized by spatial dependence. Specifically, we find significant neighborhood effects as well as significant positive economic spillovers at low income which turns negative at high income on both within and inter-municipality air emissions. Our results and hence implications suggest transboundary pollution control policies aimed at abatement would be more effective through enhanced coordination between adjacent municipalities.

- ***Ronald van Nooijen, TU Delft, The Netherlands***

Short Biography: Assistant professor at Delft University of Technology with a Doctorate in Mathematics and Information Science from the University of Amsterdam and M.Sc. degrees in mathematics and theoretical physics from Leiden University. His research interests include automatic control of environmental systems, statistics, and applications of interval analysis. He is chair of the Technical Committee 8.3 on "Environmental Modelling and control" of the International Federation of Automatic Control (IFAC), associate editor of the Hydrological Sciences Journal, chair of the Panta Rhei working group "Natural and man-made control systems in water resources", and member of the International Commission on Statistical Hydrology of the International Association of Hydrological Sciences (IAHS).

Talk:

Title: "Change point analysis for short time series" (with Alla Kolechkina)

Abstract: In the 21th-century environmental sciences have embraced the idea of change. The effects of climate variability, technological change, and societal change combine to create a more dynamical world. Central in that world is a need to quantify the effects of those changes on the environment in ways that allow a combination of environmental and economic analysis.

In this context statistical analysis of environmental and economic data is still a powerful tool, but its techniques may need to adapt to new circumstances. One example of this is change point analysis. While this is understood in a manufacturing or financial context where long time series are available, it is now also applied to relatively short time series of environmental extremes. For those applications effects due to the finite length of the time series and quantification of the uncertainty of the location of the change are of great interest. For this reason, it was decided to examine and compare the behavior of classical change point analysis tools, a Bayesian method, and a method based on confidence sets.

Scientific program

December, 19th	
08h30 – 09h00	**Registration**
09h00 – 09h45	**Welcome and Opening Remraks**
09h45 – 10h00	***Coffee Break & Poster Session #1***
10h00 – 11h00	**Presentation: *Belkacem ABDOUS*** - INSEA, Rabat, Morocco **Title:** *"On some statistical methods in public health and environmental related problems"* **Discussion: *Sophie DABO,*** University of Lille, France
11h00 – 12h00	**Presentation: *Raja CHAKIR -****INRA-AgroParisTech, France* **Title:** *"Spatial econometric analysis of land use and climate change"* ***(with Anna Lungarska)*** **Discussion: *Ghislain GENIAUX,*** INRA, Avignon, France
12h00 – 13h00	**Presentation: *Sophie DABO*** - University of Lille, France **Title:** *"Bridging Functional Data Analysis and Spatial Data Modeling"* **Discussion: *Belkacem ABDOUS*** - INSEA, Rabat, Morocco
13h00 – 14h30	***Lunch***
14h30 – 15h30	**Presentation: *George MARBUAH*** - SLU, Sweden **Title:***"Spatial analysis of emissions in Sweden"* ***(with F. Amuakwa-Mensah)*** **Discussion: *Abdellatif KHATTABI*** - ENFI, Salé, Morocco
15h30 – 15h50	**Hassan Amouzay,** FSJES-Souissi, Mohammed V University in Rabat, Morocco *"Évaluation économique de l'impact des changements climatiques sur la valeur ajoutée agricole marocaine"* ***(with A. El Ghini)***
15h50 – 16h10	**Soukaina Anougmar,** Supagro-Montpellier/Icarda-Maroc, INRASupAgro-Montpellier, France *"Economic valuation of pollination services in Morocco"* ***(with J.M. Salles)***
16h10 – 16h30	**Karim Belcaid,** FSJES-Souissi, Mohammed V University in Rabat, Morocco *"Measuring the weather variability effects on the agricultural productivity in Morocco"****(with A. El Ghini)***
16h30 – 16h45	***Coffee Break & Poster Session #1***
16h45 – 17h05	**Mounir El Karimi,** FSJES-Souissi, Mohammed V University in Rabat, Morocco *"Renewable energy consumption and economic growth in Morocco: a Granger causality analysis"* ***(with A. El Ghini)***
17h05 – 17h25	**Zied Gharbi,** University of Lille, France *"QMLE for functional spatial autoregressive models with endogenous weight matrix: an application to real environmental data"* ***(with S. Dabo)***
17h25 – 17h45	**Elkhadir Gharibi,** Faculty of Sciences of Oujda, Morocco *"Etude de la vulnérabilité de la nappe phréatique des Angads en tenant compte du recours à des ressources non conventionnelles d'irrigation (REUSE)"* ***(with M. As-Sousy, M. Ghalit, J-D. Taupin, O. El Hachemi and H. El Halouani)***
17h45 – 18h05	**Abdelkarim Jabri,** ENCG, Oujda, Morocco *"Relationship between Energy Consumption, Foreign Direct Investment, Growth, and CO2"*

December, 20th	
08h30 – 09h00	**Registration**
09h00 – 10h00	**Presentation: *Abdellatif KHATTABI*** - ENFI, Salé, Morocco **Title:** *"Analysis of the cost of environmental degradation in coastal zones"* **Discussion: *George MARBUAH,*** SLU, Sweden
10h00 – 11h00	**Presentation: *Nuno FIGUEIRDO*** - University of Coimbra, Portugal **Title:** *"Interconnection congestion determinants: the Iberian case"* ***(with Patrícia Pereira da Silva and Pedro A. Cerqueira)*** **Discussion: *Ronald van NOOIJEN,*** TU Delft, The Netherlands
11h00 – 11h15	***Coffee Break & Poster Session #2***
11h15 – 12h15	**Presentation: *Ghislain GENIAUX,*** INRA, Avignon, France **Title:** *"A space-time-categorical local linear smoother for predicting house prices"* ***(with Davide Martinetti)*** **Discussion: *Raja CHAKIR*** *-INRA-AgroParisTech, France*
12h15 – 13h15	**Presentation: *Ronald van NOOIJEN,*** TU Delft, The Netherlands **Title:** *"Change point analysis for short time series"* ***(with Alla Kolechkina)*** **Discussion: *Nuno FIGUEIRDO*** - University of Coimbra, Portugal
13h15 – 14h15	***Lunch***
14h15 – 15h15	**Presentation: *Ahmed EL GHINI,*** Mohammed V University in Rabat, Morocco **Round Table on** *"Economic growth and some related environmental issues in developing economies: Empirical evidences"* ***(with Raja Chakir, Sophie Dabo and George Marbuah)***
15h15 – 16h15	**Presentation: *Mustapha AYAITA,*** REUNET, Rabat, Morocco **Title:***"Quel futur énergétique pour le Maroc à l'horizon 2050 ?"* **Discussion: *Ahmed EL GHINI,*** Mohammed V University in Rabat, Morocco
16h15 – 16h35	**Aziz Lmakri,** FST, Tanger, Morocco *"Detecting bilinear models in panel data with environmental application"* ***(with A.Mellouk, M. Fihri and A. Akharif)***
16h35 – 16h50	***Coffee Break & Poster session #2***
16h50 – 17h10	**Jamal Sekali,** FSJES-Salé, Morocco *"Financial System, Environmental Quality and Economic Growth A case study of Morocco"* ***(with M. Bouzahzah)***
17h10 – 17h30	**Hatim Tayeq,** FP, Larache, Morocco *"A posteriori analysis of the ozone O_3 predicting model processed by the finite volume method"* ***(with A. Bergam)***
17h30 – 17h50	**Salsabil Yacour,** UM5R, Morocco/UDL, France *"Analyse spatiale de l'impact de la croissance économique sur l'environnement en Afrique et dans les pays MENA"* ***(with S. Dabo and A. El Ghini)***
17h50 – 18h10	**Hafida Zaher,** ENFI, Salé, Morocco *"Effets des incendies de forêt sur les propriétés du sol, le stockage de carbone et la minéralisation de l'azote dans le sol"* ***(with H. Benjelloun, C. Orlando and M. Sabir)***

Posters

Session #1 – December 19th, 2018

1. Mohammed Berkhouch, ENSA, Agadir, Morocco: *"Extended Gini-type measures of risk: Application to environmental risk"* **(with G. Lakhnati and M. Brutti Righi)**

2. Mohamed Bouaissa, FS, Oujda, Morocco: *"Water quality assessment of groundwater resources in the Bokoya Massif (Central Rif Morocco) based on WQI: Risk Management"* **(with M. Ghalit, E. Gharibi and J-D. Taupin)**

3. Yahya El Hammoudani, ENSA, Al-Houceima, Morocco: *"Heavy metals, PAHs and PCBs in treated sewage sludge from wastewater treatment plants"* **(with F. Dimane and H. El Ouarghi)**

4. Wafaa El Hannoun, FS, Rabat, Morocco: *"Modélisation par copule et entropie du volume d'eau stockée dans un barrage"* **(with A. Zoglat, F. Badaoui and A. Amar)**

5. Kwadwo Kusi Kyenkyehene, UM5, Rabat, Morocco: *"Prospective evaluation of the impact of land-use change on ecosystem services in the Ourika watershed, Morocco"* **(with A. Khattabi, N. Mhamdi and S. Lahsini)**

Session #2 – December 20th, 2018

6. Ismail Mohsine, FS, Rabat, Morocco: *"A statistic methodology for estimating air temperature using MODIS LST data"* **(with I. Kacimi, K.Omari and N.Kassou)**

7. Hanane Rachih, ENSIAS, Rabat, Morocco: *"Reverse Logistics as a Solution for the Ecological Issues"* **(with F. Mhada and R. Chiheb)**

8. Alexis Sabumukiza, UH2, Casabalanca, Morocco: *"Gestion écosystémique pour une meilleure adaptation aux changements climatiques et optimisation de la production des services écosystémiques"* **(with A. Khattabi and T. Boumeaza)**

9. Ahmed Safsafi, FP, Nador, Morocco: *"Le suivi/évaluation permanent, la clé sur la voie de la durabilité. (Une visualisation par analyse du cycle de projet)"*

10. Hafida Zaher, ENFI, Salé, Morocco : *"Les indicateurs de la vulnérabilité des sols à l'érosion et aux changements climatiques dans le bassin versant de Bou Regreg au Maroc"* **(with H. Benjelloun, M. Sabir, I. Mahamane and L.M. Dore)**

11. Ahmed Zaher, University of Lille, France : *"Literature review on environment-growth nexus for OECD countries"* **(with A. El Ghini)**

Training course: "Spatial Econometrics"

By Raja Chakir, INRA-AgroParisTech, France

December 21st, 2018, 10h00 -11h30

Abstract:

This course is a lecture-based introduction to the methodology and application of spatial econometric models for Master and Ph.D. students.

The objective of the course is to provide an introduction to spatial econometrics. Students will learn how to model and incorporate spatial dependencies into their empirical analyses.

The course will cover topics such as: Exploratory Spatial Data Analysis, spatial tests, spatial model choice and specification. Estimation methods presented will include MLE (Maximum Likelihood) and GLS (Generalized Least Squares).

Bibliography:

English:

1. Elhorst, J. P. (2014): Spatial econometrics : from cross-sectional data to spatial panels, Springer.
2. LeSage and Pace (2009), Introduction to spatial econometrics, Boca Raton, Taylor & Francis.
3. Anselin L. (1988), Spatial econometrics: Methods and models. Kluwer Academic Publishers.

French:

1. Le Gallo J. (2004), Hétérogénéité spatiale, principes et méthodes, Economie et Prévision, vol. 162, pp. 151-172.
2. Le Gallo J. (2002), Econométrie spatiale : l'autocorrélation spatiale dans les modèles de régression linéaire, Economie et Prévision, vol. 155, pp. 139-158.
3. Jayet H. (2001), Econométrie des données spatiales. Une introduction à la pratique, Cahiers d'Economie et de Sociologie Rurale, vol. 58-59, pp. 105-129.