



22<sup>nd</sup> International  
Input-Output Conference

Lisbon | Portugal  
14 – 18 July 2014

# CONFERENCE PROGRAM

Promoted by:



International Input-Output Association  
Vienna, AUSTRIA  
[www.iioa.org](http://www.iioa.org)

Hosted by:



**LISBOA**  
**SCHOOL OF**  
**ECONOMICS &**  
**MANAGEMENT**



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## Welcome Message

Sixty four years after the 1st International Input-Output Conference, it is our great pleasure to welcome you to the 22nd International Input-Output Conference, to Lisboa and to Portugal, on behalf of the Research Unit on Complexity and Economics (UECE), the Lisboa School of Economics and Management (ISEG) and the University of Lisboa.

Complying with the main objective of the International Input-Output Association, the Local Organizing Committee in Lisbon has tried to create the best possible conditions for this conference, which is one more opportunity for the advancement of research and teaching of input-output analysis.

Out of nearly 530 submissions, just 360 were accepted, involving about 600 authors and co-authors, which includes the 320 registered at this conference. We really hope that our guests, both Portuguese and those from 44 other countries, will all feel welcome at the Convento das Inglesinhas – a seventeenth-century building, which has been chosen to host this conference. In order to promote a friendly atmosphere and the exchange of ideas and experiences amongst participants, we have prepared a social programme to which we have added a touch of Portuguese culture. Thus we will hold welcome receptions on Sunday (13/July) for the participants in the 4th Edition of the International School of I-O Analysis, and later on Monday (14/July) for all conference participants. Similar to the welcome reception for the conference, the conference dinner on Thursday (17/July) will take place in the Salão Nobre (the old library). Morning and afternoon coffee breaks will be served in the cloisters and lunches will be served in the students' canteen. All meals will include some typical Portuguese food and drink, such as Port wine at the welcome receptions and pastéis de nata during the coffee breaks. On Wednesday (17/July) afternoon we have arranged the conference excursion, when we will visit Sintra – a historic, World Heritage town, 25 kilometres (16 miles) from Lisboa. On the way to Lisbon, interesting places along the Atlantic coast will be also visited (Cabo da Roca, Boca do Inferno, Cascais). Typical Portuguese songs will be sung to animate the following occasions during our programme: the opening ceremony (15/July), with the Choir of the Technical University of Lisbon; the conference dinner (17/July), with Fado sung by L.Silva; the closing ceremony (18/July), with the Tuna Económicas. Furthermore, we will also have a paddle tennis competition, with two matches being held on Tuesday (15/July), and Friday (18/July).

In support of the Local Organizing Committee, the Scientific Program Committee, chaired by Kurt Kratena, has prepared a very interesting and complete scientific programme, with four plenary and ten parallel sessions. This equates to one plenary session per day. For the first three, the keynote speeches will be delivered by: W.Rademacher and G.Hewings; J.Guilhoto and M.Lahr; and F.Sancho and D.Meade. The last plenary session will be the Leontief Prize Session, when the four winning works will be presented. 36 topics about input-output analysis will be discussed during the ten parallel sessions, some of which will have more than five parts, which is proof of the considerable advancement of research in this area.

Without doubt, the 4<sup>th</sup> Edition of the International School of Input-Output Analysis (ISIOA) will certainly be a contribution for the advancement of teaching of input-output analysis, as will be stated in the welcome message from its Director, José M. Rueda-Cantuche

Further to the conference, we have also suggested ideas of places to visit in Lisbon and Portugal on the conference website.

We hope to have created the best conditions for the generating of research, insights and ideas at this conference, and that this will provide a step forward in input-output analysis.

Thank you for coming!

Enjoy your stay in Lisbon and Portugal!

Susana Santos

Chair of the Local Organizing Committee

ISEG (Lisboa School of Economics and Management) of the University of Lisboa

UECE (Research Unit on Complexity and Economics) and DE (Department of Economics)

## **Welcome to the 4<sup>th</sup> Edition of the ISIOA!!**

The International School of Input-Output Analysis (ISIOA) was launched in 2011, although its earlier seminal activities started at the 18<sup>th</sup> International Input-Output Conference in Sydney (Australia) in 2010. The first edition took place in Alexandria (USA, 2011) and it was followed by Bratislava (Slovakia, 2012), Kitakyushu (Japan, 2013) and now, Lisbon (Portugal, 2014).

The aim of the ISIOA is twofold. The ISIOA trains scholars in the use of standard tools of input-output analysis in a broad sense, both from the perspective of the producer and the user of input-output tables; and encourages direct communication and/or collaboration between scholars and renowned researchers/lecturers in the field. To do so, the ISIOA organises teaching sessions on core topics in input-output analysis at the annual International Input-Output Conferences. These sessions form Modules for which the participants receive the Certificate of Studies in Input-Output Analysis of the ISIOA once they have fulfilled all established criteria.

The number of students has increased by 17% from the first edition (2011) reaching up to 75 students this year. In the past, the overall degree of satisfaction among the students remained quite stable, being around 8.6 out of 10 on average. The number of students that merited the Certificate of Studies in Input-Output Analysis of the ISIOA has progressively increased and hopefully, it will be well over 10 next year.

We welcome you all to this new Edition of the ISIOA, which we have prepared with a lot of enthusiasm, renowned experts and full of good wishes for you and your academic careers. We hope you enjoy your stay in Lisbon and that you get the most of the ISIOA!

José M. Rueda-Cantuche

Director of the ISIOA

## **Local Organizing Committee**

(UECE - ISEG, University of Lisboa, Portugal)

Chairs: Susana Santos

João Carlos Lopes

João Ferreira do Amaral

## **Scientific Program Committee**

Chair: Kurt Kratena (Austrian Institute of Economic Research (WIFO), Austria)

Ana Sargento (School of Technology and Management - Polytechnic Institute of Leiria, Portugal)

Andreas Löschel (ZEW, University of Heidelberg, Germany)

Bart Los (Faculty of Economics, University of Groningen, Netherlands)

Eduardo Castro (Department of Social Sciences, Politics and Territory - University of Aveiro, Portugal)

Elsa Vaz (School of Social Sciences - University of Évora, Portugal)

Erik Dietzenbacher (Faculty of Economics, University of Groningen, Netherlands)

Esteban Fernández Vázquez (Faculty of Economics, University of Oviedo, Spain)

Gerhard Streicher (Austrian Institute of Economic Research (WIFO), Austria)

Ignazio Mongelli (EC-Institute for Prospective and Technological Studies, Spain)

João Albino (Faculty of Economics - University of Algarve, Portugal)

João Ferreira do Amaral (UECE - ISEG – University of Lisboa, Portugal)

João Rodrigues (IST– University of Lisboa, Portugal)

Joaquim Guilhoto (Department of Economics, University of São Paulo, Brasil)

Jose M. Rueda Cantuche (EC-Institute for Prospective and Technological Studies, Spain)

Mário Fortuna (Department of Economics - University of Açores, Portugal)

Michael L. Lahr (Edward J. Bloustein School, Rutgers University, USA)

Pedro Ramos (GEMF, Faculty of Economics - University of Coimbra, Portugal)

Robert Stehrer (The Vienna Institute for International Economic Studies (WIIW), Austria)

Rosa Duarte (Faculty of Economic, University of Zaragoza, Spain)

Umed Temurshoev (EC-Institute for Prospective and Technological Studies, Spain)

## Support Team

Sandra Araujo (*UECE Secretariat*)

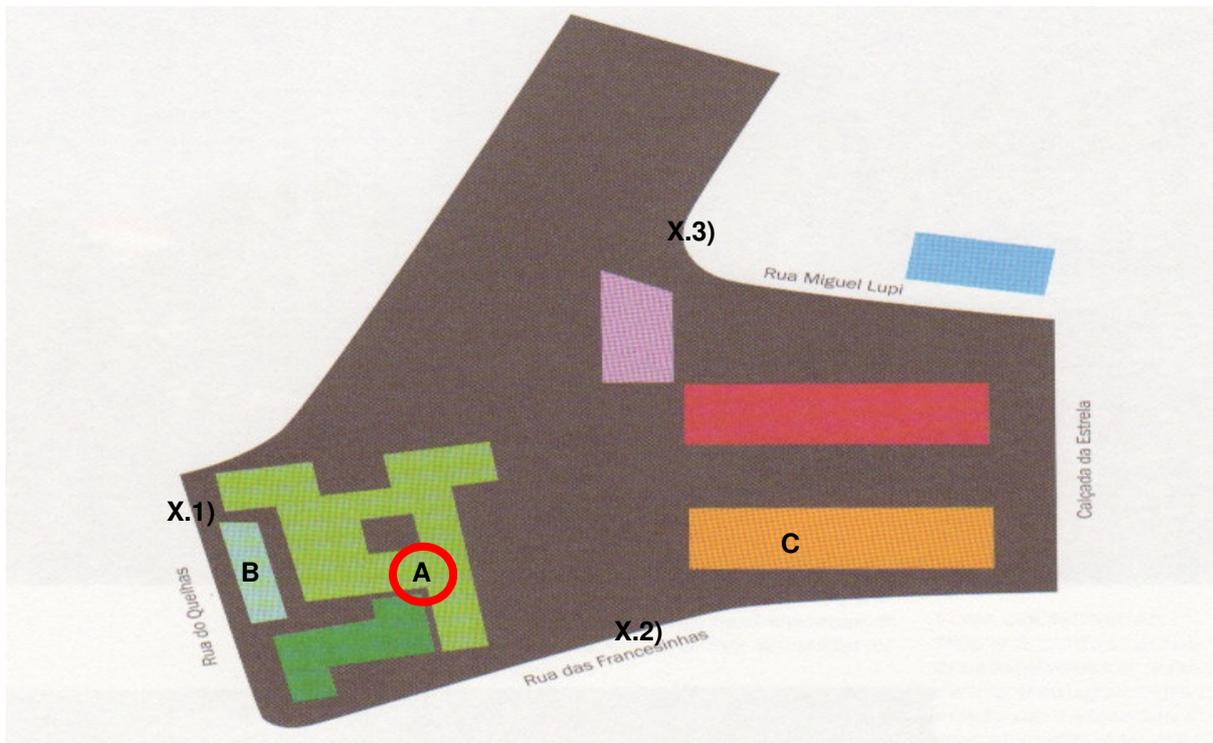
*ISEG Students:*

Francisco Mendonça  
Helena Merkens  
João Frias  
Luísa Vieira  
Margarida Gil Beja

Maria da Luz  
Mariana Morgado  
Miguel Castro  
Ricardo Antunes  
Rita Cunha

## Venue and Accessibility

ISEG campus map:



Legend:

- A. Quelhas Building** (ISIOA and Conference Sessions; Welcome Reception for the Conference; Coffee Breaks; Conference Dinner)
- B. Quelhas Restaurant** (Welcome Reception for the ISIOA)
- C. Francesinhas II Building** (Conference Lunch – floor 0; Computers Room – floor 1)

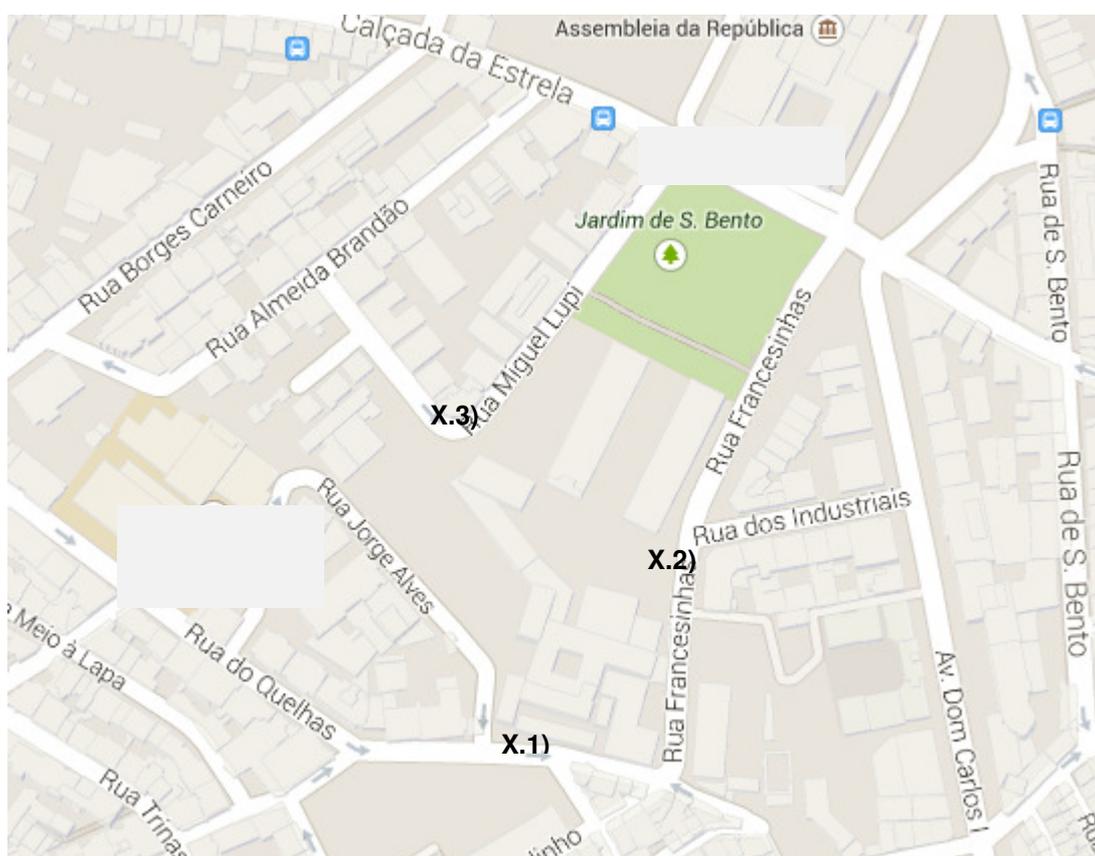
Campus Entrances:

**X.1)** Rua do Quelhas, 6, 1200-781 Lisboa - GPS Coordinates: 38.7095, - 9.1556.

**X.2)** Rua das Francesinhas, 1200-675 Lisboa - GPS Coordinates: 38.7104, - 9.1548.

**X.3)** Rua Miguel Lupi - 1249-078 Lisboa - GPS Coordinates: 38.7108, - 9.1559.

Conference participants have **access to parking** at entrance X.3 of the ISEG campus), via Rua Miguel Lupi, and will be asked to show their conference badge (you may be requested to identify your name in the list of conference participants).

**Accessibility:**

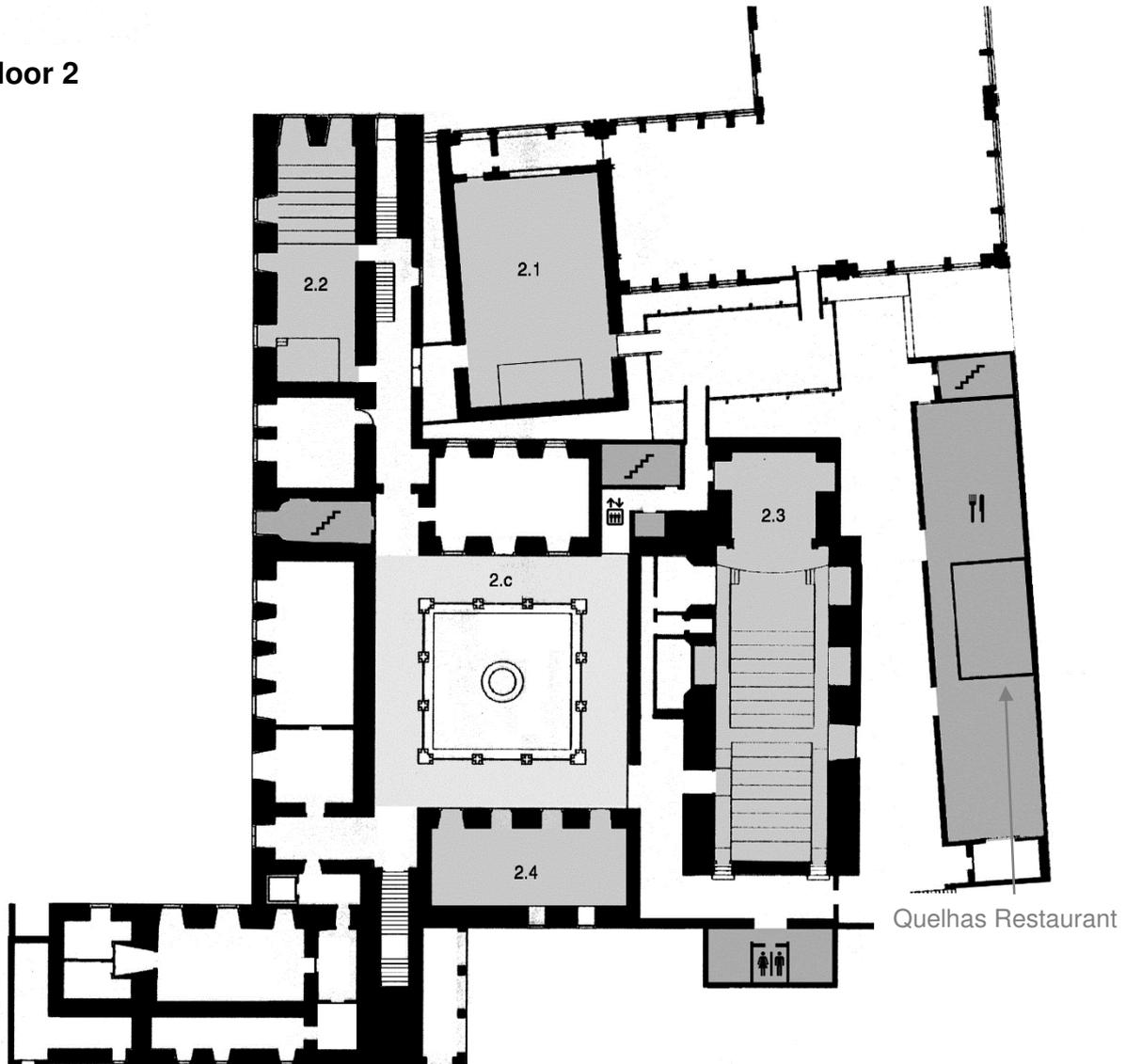
EXIT	NUMBER
<b>BUS</b>	
<i>Avenida D. Carlos I</i>	706-727
<i>Rua Borges Carneiro</i>	713-773
<i>Rua Conde Barão</i>	60-794
<b>TRAM</b>	
<i>Calçada da Estrela</i>	28-25
<i>Avenida 24 de Julho</i>	15-18
<b>FERRIES</b>	
<i>Praça Terreiro do Paço</i>	Link to bus, tram or walk
<i>Estação do Cais do Sodré</i>	Link to bus, tram or walk
<b>TRAINS</b>	
<i>Estação de Santos</i>	<i>Cascais Line</i>
<b>METRO</b>	
<i>Estação do Rato</i>	<i>Girassol Line (Yellow)</i>
<i>Estação do Cais do Sodré</i>	<i>Caravela Line (Green)</i>

**TAXIS** may be ordered through the telephone numbers: +351 217932756; +351 218111100.

**In the event of sudden illness or accident dial: 112 (European Emergency Number)**

## Rooms Layout (Quelhas Building)

### Floor 2

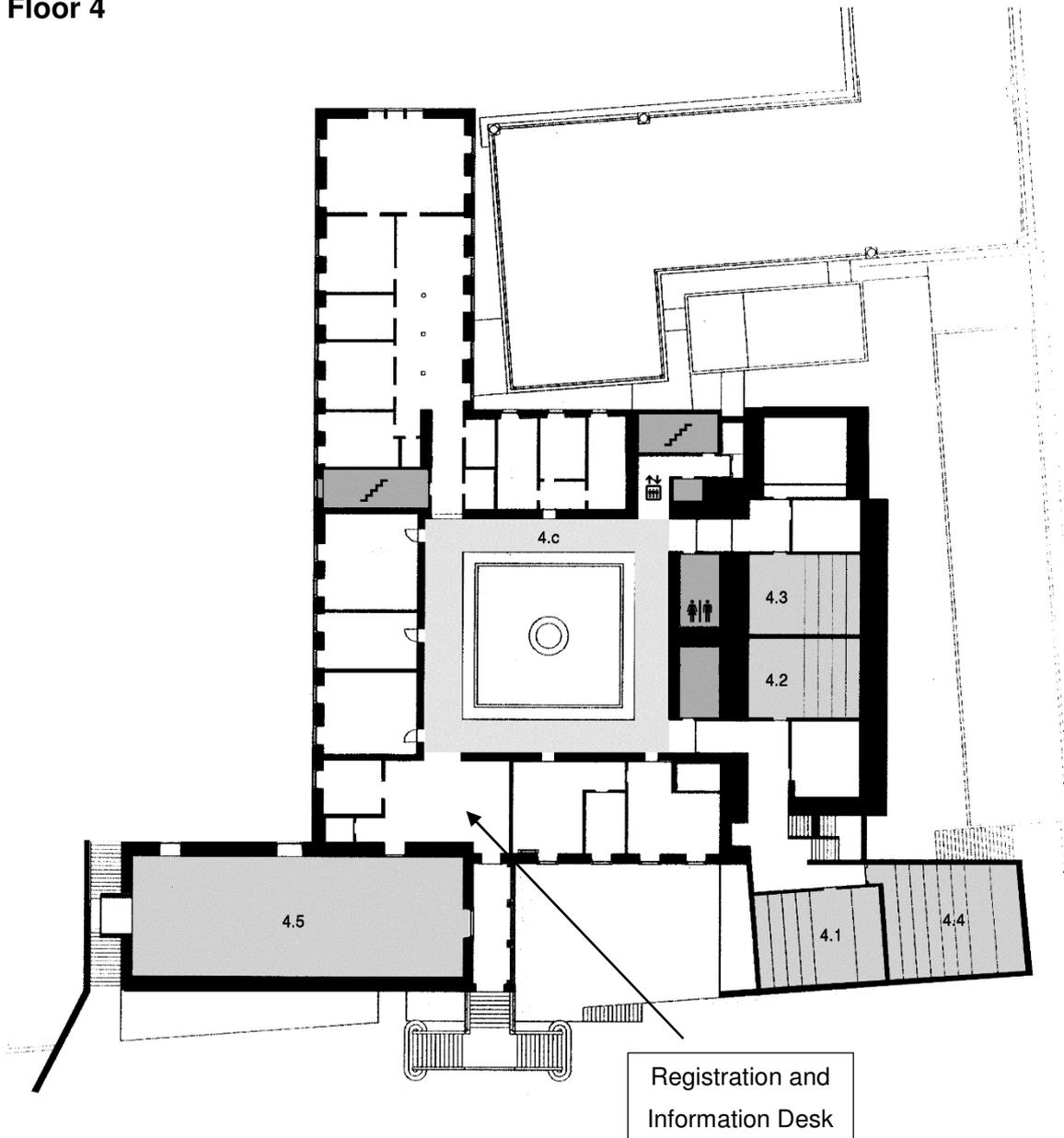


#### Legend:

- 2.1. Auditorium 2
- 2.2. Auditorium 3
- 2.3. Auditoria *Caixa Geral de Depósitos*
- 2.4. Classroom *EDIFER*
- 2.c. Cloister



## Floor 4



## Legend:

- 4.1. Lecture Theatre 1
- 4.2. Lecture Theatre 3
- 4.3. Lecture Theatre 4

- 4.4. Classroom *Banco Espírito Santo*
- 4.5. *Salão Nobre* (old library)
- 4.c. Cloister

**Registration and Information Desk**

During the work period of the Conference, participants may register and request assistance at the Registration and Information Desk, which will be in the floor 4 of Quelhas building (see Rooms Layout).

## Access to Conference Activities

The name badge that the conference participants will receive upon registration allows the corresponding access to all the conference program – social and scientific.

The accompanying persons, registered with the Conference participants, will also receive upon registration a badge that allows the corresponding access to the conference social program (welcome reception, coffee breaks, lunches, conference dinner and excursion) and punctually the scientific program.

Not registered accompanying persons who want to integrate the group, may access total or partially to the conference social program by paying the following amounts:

- Total: 150€;
- Partial: welcome reception, 15€; coffee breaks, 2.5€ each; lunch, 7.5€ each; conference dinner, 50€; excursion, 60€.

**Please, do not forget your badge, otherwise you may have problems in the access to the conference program**

**Conference Excursion**, Wednesday, 16/July: **Pick Up** at 13:30h and **Drop Off** at 18:30-19:00h – at the Rua das Francesinhas, close to entrance 2 of the ISEG campus. If you get separated from the main group during the tour, please contact Celina Batista: +351 926 049 232.

## Internet Access

ISEG wireless network will be accessible during the conference:

- Choose 'Eduroam' on your networks
- Username: guest01@guests.iseg
- Password: maquedo2014

You have 50 guests' account available, each of which can be accessed by several people at the same time.

Therefore, you can access Eduroam with the username account from 01 (guest01@guests.iseg) until 50 (guest50@guests.iseg). For example, guest02@guests.iseg, guest03@guests.iseg and so on. Use the same password (maquedo2014).

If the case of difficulty, please, contact the Registration and Information Desk.

A computer room will be available for delegates at floor 1 of Francesinhas II Building:

- Username: alunos\iioa22conference
- Password: 22iioa

**Program Overview**

Time	Sun, 13/Jul/2014	Mon, 14/Jul/2014	Tue, 15/Jul/2014	Wed, 16/Jul/2014	Thu, 17/Jul/2014	Fri, 18/Jul/2014
08:30 - 09:00			Opening Ceremony			
09:00 - 09:30		International School of IO Analysis (Session 1)	Plenary Session 1	Plenary Session 2	Plenary Session 3	Parallel Sessions 8
09:30 - 10:00						
10:00 - 10:30	IIOA Council Meeting I	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30 - 11:00						
11:00 - 11:30		International School of IO Analysis (Session 2)	Parallel Session 1	Parallel Sessions 4	Parallel Sessions 5	Parallel Sessions 9
11:30 - 12:00						
12:00 - 12:30						
12:30 - 13:00	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
13:00 - 13:30						
13:30 - 14:00	IIOA Council Meeting II	International School of IO Analysis (Session 3) / Eurostat Technical Group Meeting (by invitation only; Classroom CTT Correios)	Parallel Sessions 2	Excursion	Parallel Sessions 6	Parallel Sessions 10
14:00 - 14:30						
14:30 - 15:00						
15:00 - 15:30		Coffee Break	Coffee Break		Coffee Break	Coffee Break
15:30 - 16:00						
16:00 - 16:30		International School of IO Analysis (Session 4) / Eurostat Technical Group Meeting (by invitation only; Classroom CTT Correios)	Flash Session 1		Flash Session 2	Flash Session 3
16:30 - 17:00			Parallel Sessions 3		Parallel Sessions 7	Plenary Session 4
17:00 - 17:30						
17:30 - 18:00		Closure session of the ISIOA				
18:00 - 18:30	IIOA Council Meeting III		ESR Editors Meeting		IIOA General Assembly	Closing Ceremony
18:30 - 19:00						
19:00 - 19:30	Welcome Reception of the ISIOA	Welcome Reception for the IIOA Conference				
19:30 - 20:00			IIOA Padel Tennis Competition			IIOA Padel Tennis Competition
20:00 - 20:30					Conference Dinner	
20:30 - 21:00						
21:00 - 21:30						
21:30 - 22:00						
22:00 - 22:30						
22:30 - 23:00						



## ISIOA Modules

### 1. Applied General Equilibrium: an Introduction

Lecturers: Prof. M. Alejandro Cardenete (Loyola Andalusia University, Spain) and Ana I. Guerra (University of Granada)

#### Summary

Computable General Equilibrium (CGE) Models have grown to satisfy the ever-expanding demand for assessing the potential impacts of policies in a wide-range of settings. The increasing interest on these analytical instruments stems from their ability to integrate the different parts of the economic system in a comprehensive economy-wide framework. The objectives of this training session are the following: to provide the linkages from Input-Output (IO) Analysis, Social Accounting Matrices (SAM) to CGE Models, to present the economic principals underlying CGE models and, to show participants how to build a CGE with the General Algebraic Modelling System (SAM) using empirical data. Apart from offering a complete overview of the CGE modelling, this training session should allow the participants to gain a better understanding of economic policy questions that can be approached with these versatile economic instruments.

#### Outline

1. Importance of Computable General Equilibrium Modelling for Economic Policy Decisions.
2. From Input Output Analysis to CGE Models: What makes the difference?
3. An Overview of General Equilibrium Theory.
  - 3.1. The Walras Law and the Walrasian Equilibrium.
  - 3.2. Normative Properties of Walrasian Equilibrium: The Relevance of Uniqueness and Existence for Static Comparative Analysis.
4. Building a “small” CGE Model with GAMS. Part I.
  - 4.1. Getting started: Describing our economy.
  - 4.2. Equilibrium Equations.
5. Building a “small” CGE Model with GAMS. Part II.
  - 5.1. Calibrating and Solving the Model.
  - 5.2. “Playing with the Model”: Evaluating Tax Policies.

#### Remarks

- It could be necessary that participants have a basic level in Input-Output Tables, Social Accounting Matrices and Micro- and Macro-economic foundations. Participants must bring their laptops with them.
- We will provide participants a link where they can download a “Demo” GAMS version.

#### References

Applied General Equilibrium. An Introduction, M. A. Cardenete, A. I. Guerra and F. Sancho, Springer, 2012.

## 2. Environmental Life Cycle Assessment

Lecturer: Sangwon Suh

Bren School of Environmental Science and Management  
University of California, USA

Objective: this class aims at understanding the basic principles of Life Cycle Assessment (LCA) and how Input-Output Analysis (IOA) and LCA can benefit each other. Main assumptions, computational structure and data sources of LCA will be discussed, and participants will analyze and solve numerical examples through hands-on exercises.

Background and motivation: LCA is a tool to evaluate environmental impacts of goods and services. It has been used by manufacturers and researchers to compare alternative design parameters, processes, raw materials and logistics options. Over the last decade, the need to analyze environmental impacts of production and consumption at a national and international-level led to the use of IOA in LCA. Nation-wide LCA studies have been performed in Europe, North America, Japan and China applying input-output tables. In parallel, some LCA researchers recognized the need of addressing data gaps in detailed, process level LCA using environmentally extended input-output tables, which led to the development of hybrid LCA. Other methodological connections between IOA and LCA have also been recognized in the literature. For example, the link between allocation in LCA and supply-use framework in IOA has been discussed; marginal or consequential modeling also has an overlap between the two fields. Today, many LCA practitioners use IOA and vice versa, whereas there still seems to be a disciplinary barrier between them, which motivated the organization of this class.

### Course topics:

1. Introduction to LCA
  - Goal and Scope definition
  - Life Cycle Inventory
  - Life Cycle Impact Assessment
2. Product-by-Process framework
  - Computational structure
  - Hands on exercise
  - Allocation
  - Comparison with IOA
3. Truncation problem and hybrid LCA
  - Data gap in process LCA
  - Computational structure of hybrid LCA
  - Remaining issues in hybrid LCA
  - Hands on exercise
  - Iterative hybrid method
4. Nation-wide LCA studies
  - Motivation
  - Key outcomes
  - Hands on exercise
5. Marginal and/or consequential modeling
  - Key issues in marginal/consequential modeling
  - Approaches to marginal/consequential modeling
  - Hands on exercise

### 3. Material Flow Analysis

Lecturer: Stephan Lutter

Vienna University of Economics and Business, Austria

#### Motivation:

History reveals that economic and thus human development have always been closely linked to the control and production of materials. Gathering information on human's material consumption is hence important, as many of today's most pressing environmental problems are directly linked to the extent of our use of materials. The main purpose of economy-wide material flow accounting (EW-MFA) is to provide information on composition and changes of the physical structure of socio-economic systems. MFA represents a useful framework for analysing the relationship between the economic system and the environment and deriving aggregated indicators. Main areas of application of MFA include among others (1) historical analysis, (2) globalisation, trade and environmental distribution, and (3) the integration with data on the structure of our economies (e.g. via input-output tables), in order to analyse the environmental impact of specific economic sectors and identify "hot spots" where targeted action has to start from.

In order to implement effective strategies towards higher resource efficiency, the research group "Sustainable Resource Use" at the Vienna University of Economics and Business measures and analyses human resource use. The group's work includes the development of methods and indicators of environmental statistics, calculations of resource use at the global, national, sectoral and product level and the compilation of international environmental databases. The group has a long and renowned expertise in EW-MFA and is constantly contributing to methodological improvements of accounting methodologies by means of research projects such as the EU-FP6/7 projects EXIOPOL, CREEA, and DESIRE as well as through participation in research exchange with Eurostat. In this context, in recent years, focus has been set more and more on the improvement of methodological approaches regarding integrating MFA data with input-output data and models respectively. The above mentioned projects are the best examples in this regard.

Before this background, I would like to thank for the kind invitation to present a proposal for a module on Input-Output and Material Flow Analysis for the fourth edition of the International School of Input-Output Analysis (ISIOA) of the International Input-Output Association (IIOA) in Lisbon (Portugal) in July 2014. Please find below a first outline of the proposed module which encompasses the foreseen content of the four specific sessions. The underlying idea is to introduce participants into the general methodological approaches of EW-MFA, and building on this knowledge, to show practical applications and uses of EW-MFA especially in combination with input-output analysis. Thereby, I will use various examples of our works with environmentally extended input-output modelling.

I myself, Stephan Lutter, hold a Master in Environmental Engineering from the University of Life Sciences, Vienna, and a Master of Natural Resources Management and Ecological Engineering from the University of Life Sciences, Vienna, and Lincoln University, New Zealand. Over time I have set my working focus on environmental accounting as well as on international trade and globalisation and resource dependencies. From 2007 to 2013 I worked as researcher and deputy head of the research group "Sustainable Resource Use" at SERI (Sustainable Europe Research Institute) in Vienna, before moving with the whole group to Vienna University of Economics and Business in October 2013. Furthermore, I am co-developer of the worldwide most comprehensive global MFA database ([www.materialflows.net](http://www.materialflows.net)).

## Outline

The module on Input-Output and Material Flow Analysis will be split into four sessions, each focussing on different aspects. The first module will introduce the participants into the methodology of economy-wide material flow analysis (EW-MFA), followed by the second session focussing on the possibilities and methodologies to link EW-MFA with (single-region and multi-regional) input-output modelling. The third session will show practical examples of applying environmentally-extended input-output model results on eco-economic policy making. Finally, session four will give an overview of the status quo in research on EW-MFA and EE-MRIO, introduce ongoing research projects and highlight future research needs.

### (1) EW-MFA: methodology, indicators, standards

This first session introduces the concept of economy-wide material flow analysis (EW-MFA). We start with a short look into the history of EW-MFA and then get a deeper insight in the methodological basis, including definition of main material groups and issues related to boundary setting. Further, the main indicators to be calculated and their informative values will be presented. Main sources for international datasets on EW-MFA will be reviewed. Finally, the main standards for EW-MFA (most importantly, Eurostat and OECD) and ongoing processes will be discussed.

Objective: Participants get basic knowledge about the EW-MFA methodology, derived indicators and existing standards as well as sources for material flow data on the international level

### (2) MFA and (MR)IO: methodology and examples

Research on and application of environmentally extended multi-regional input-output models (EE MRIO) has been gaining relevance during the last decade, as this approach allows for a comprehensive analysis of our societies' impacts on the environment. With regard to materials, EW-MFA offers the most appropriate data basis for an application in combination with single-region and multi-regional IO. In this session we will have a look at the methodological basis of integrating different IO models with EW-MFA and give practical examples in terms of specific results.

Objective: Participants understand how to link EW-MFA to input-output models and have knowledge about the current state of the art in MFA-(MR)IO

### (3) Application of MFA/EE-MRIO in resource efficiency policy making: "you can't manage what you can't measure"

As EE-MRIO methodology and therefore results become more solid also their application in policy making is gaining relevance. In session three we will focus on specific applications of EE-MRIO relevant in the context of resource efficiency policy making (including e.g. industry benchmarking, headline indicators, issues of trade and outsourcing), show examples and get an overview of additional possible fields of policy making where EE-MRIO could contribute.

Objective: Participants get an understanding for the fields of policy application of EE-MRIO

### (4) Expanding the threshold knowledge of MFA/(MR)IO

This session will identify necessary next steps on the research agenda towards a more meaningful analysis building on EE-MRIO. Examples of ongoing research (projects) will be given and upcoming policy questions identified, where EE-(MR)IO could contribute. Thereby, we will build on ongoing work by the lecturer in the field of EW-MFA and EE-MRIO.

Objective: Participants get a feeling for the possibilities and challenges of EW-MFA and EE-MRIO and get encouraged to identify further applications and research fields

## 4. Disasters analysis

Lecturer: Yasuhide Okuyama

University of Kitakyushu, Japan

Aim: This course aims to introduce the foundation and applications of economic modeling of disaster impacts. The course will examine the concepts and theory of disaster analysis, and these principles discussed in the course provide the basis for analyzing and understanding the disaster impact on an economy. The emphasis in the course will be on the use of input-output model and its variants for the disaster impact analysis. If successfully completed the course, the students will be equipped with the knowledge and skill, and the understanding of the limitations and cautions to estimate the economic impact of disasters. This course will be relevant to those who are interested in economic analysis of disaster, preparedness and mitigation policies against disasters, risk assessment, cost-benefit analysis of disaster counter measures, and natural hazards and disasters in general.

Session 1: Introduction, Concepts, and Definitions, and Issues

- Why economic analysis of disasters is needed?
- Concepts and Definitions
- Analytical Framework (what and to what extent should be estimated)
- Issues of Quantitative Assessment of Disaster Impacts

Session 2: Input Data and IO Model

- Input Data for the Model (ECLAC methodology and others)
- IO Model and Applications

Session 3: Impact Estimation with IO Variants

- IO variants (interregional, SIM, IIM, etc.) and the applications

Session 4: Long-run Effect and its Analysis with IO Framework

- Long-run Effects of a Disaster
- Examples and Methodologies

## 5. Managing Uncertainty in Input-Output Analysis

Lecturer: João Rodrigues

Instituto Superior Técnico, Technical University of Lisbon, Portugal

In this module we will present the theory of uncertainty of IO systems and you will learn simple algorithms to handle missing and partial information during IO data processing and to estimate the uncertainty and of IO multipliers. The module is organized in four lessons (with 1h30m each) which involve the presentation of the theory and its application to a simplified case-study of multi-scale IO integration. Before the course the students will be given access to the relevant literature and extensions but no previous study is required. The students should bring a computer to perform exercises.

Lesson 1: Data structure and partial information: In the first lesson we introduce the basic concepts of IO uncertainty (stochastic properties, accounting identities and so forth) and use an invariance principle to build an MRIO in the presence of partial information.

Lesson 2: Missing priors and balancing: In the second lesson we use the maximum entropy principle to obtain algorithms that determine missing uncertainty and correlation data and lead to a balanced set of posteriors.

Lesson 3: Multiplier uncertainty and bias: In the third lesson we present a numerical algorithm based on Gaussian quadrature and theoretical expressions based on the Isserlis theorem to study the uncertainty and bias of multipliers.

Lesson 4: Sensitivity analysis to assumptions: In the fourth lesson we present the allocation formulation of IO systems and show how, by specifying allocation rules, it is possible to gauge the sensitivity of multipliers to technological assumptions.

## SESSION PLAN

### Sun, 13/Jul/2014

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- 10:00 - 12:30 *IIOA Council Meeting I*
- 12:30 - 13:30 *Lunch*
- 13:30 - 17:00 *IIOA Council Meeting II*
- 18:00 - 18:30 *IIOA Council Meeting III*
- 18:30 - 20:00 *Welcome Reception of the ISIOA*  
Location: **C. Quelhas Building - Restaurant**

### Mon, 14/Jul/2014

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#### 09:00 - 10:30 International School of IO Analysis (Session 1)

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- Location: **(3.1) Classroom 306**  
Topic: **Material Flow Analysis**  
Chair: Stephan Lutter  
  
1. Module Material Flow Analysis: Session 1  
by *Stephan Lutter*
  
- Location: **(3.4) Classroom DELTA**  
Topic: **Applied General Equilibrium: an Introduction**  
Chair: M. Alejandro Cardenete Flores and Ana I. Guerra  
  
1. Module Applied General Equilibrium: Session 1  
by *Manuel Alejandro Cardenete Flores, Ana Isabel Guerra*
  
- Location: **(3.5) Classroom IAPMEI**  
Topic: **Disasters Analysis**  
Chair: Yasuhide Okuyama  
  
1. Module Disasters Analysis: Session 1  
by *Yasuhide Okuyama*
  
- Location: **(3.7) Classroom Santander Totta**  
Topic: **Managing Uncertainty in Input-Output Analysis**  
Chair: Joao Rodrigues  
  
1. Module Managing Uncertainty in Input-Output Analysis: Session 1  
by *Joao Rodrigues*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Environmental LCA**  
Chair: Sangwon Suh

1. Module Environmental LCA: Session 1  
by *Sangwon Suh*

10:30 - 11:00 *Coffee Break*

Location: **(3.c) Cloisters - Coffee Breaks Location**

**11:00 - 12:30 International School of IO Analysis (Session 2)**

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- Location: **(3.1) Classroom 306**  
Topic: **Material Flow Analysis**  
Chair: Stephan Lutter

1. Module Material Flow Analysis: Session 2  
by *Stephan Lutter*

- Location: **(3.4) Classroom DELTA**  
Topic: **Applied General Equilibrium: an Introduction**  
Chair: M. Alejandro Cardenete Flores and Ana I. Guerra

1. Module Applied General Equilibrium: Session 2  
by *Manuel Alejandro Cardenete Flores, Ana Isabel Guerra*

- Location: **(3.5) Classroom IAPMEI**  
Topic: **Disaster Analysis**  
Chair: Yasuhide Okuyama

1. Module Disasters Analysis: Session 2  
by *Yasuhide Okuyama*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Managing Uncertainty in Input-Output Analysis**  
Chair: Joao Rodrigues

1. Module Managing Uncertainty in Input-Output Analysis: Session 2  
by *Joao Rodrigues*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Environmental LCA**  
Chair: Sangwon Suh

1. Module Environmental LCA: Session 2  
by *Sangwon Suh*

12:30 - 14:00 *Lunch*

Location: **G. Francesinhas II Building - Canteen**

**14:00 - 15:30 International School of IO Analysis (Session 3) / Eurostat Technical Group Meeting (by invitation only; Classroom CTT Correios)**

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- Location: **(3.1) Classroom 306**  
Topic: **Material Flow Analysis**  
Chair: Stephan Lutter

1. Module Material Flow Analysis: Session 3  
by *Stephan Lutter*

- Location: **(3.4) Classroom DELTA**  
Topic: **Applied General Equilibrium: an Introduction**  
Chair: M. Alejandro Cardenete and Ana I. Guerra

1. Module Applied General Equilibrium: Session 3  
by *Manuel Alejandro Cardenete Flores, Ana Isabel Guerra*

- Location: **(3.5) Classroom IAPMEI**  
Topic: **Disaster Analysis**  
Chair: Yasuhide Okuyama

1. Module Disasters Analysis: Session 3  
by *Yasuhide Okuyama*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Managing Uncertainty in Input-Output Analysis**  
Chair: Joao Rodrigues

1. Module Managing Uncertainty in Input-Output Analysis: Session 3  
by *Joao Rodrigues*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Environmental LCA**  
Chair: Sangwon Suh

1. Module Environmental LCA: Session 3  
by *Sangwon Suh*

15:30 - 16:00 *Coffee Break*

Location: **(3.c) Cloisters - Coffee Breaks Location**

**16:00 - 17:30 International School of IO Analysis (Session 4) / Eurostat Technical Group Meeting (by invitation only; Classroom CTT Correios)**

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- Location: **(3.1) Classroom 306**  
Topic: **Material Flow Analysis**  
Chair: Stephan Lutter

1. Module Material Flow Analysis: Session 4  
by *Stephan Lutter*

- Location: **(3.4) Classroom DELTA**  
Topic: **Applied General Equilibrium: an Introduction**  
Chair: M. Alejandro Cardenete and Ana I. Guerra

1. Module Applied General Equilibrium: Session 4  
by *Manuel Alejandro Cardenete Flores, Ana Isabel Guerra*

- Location: **(3.5) Classroom IAPMEI**  
Topic: **Disasters Analysis**  
Chair: Yasuhide Okuyama

1. Module Disasters Analysis: Session 4  
by *Yasuhide Okuyama*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Managing Uncertainty in Input-Output Analysis**  
Chair: Joao Rodrigues

1. Module Managing Uncertainty in Input-Output Analysis: Session 4  
by *Joao Rodrigues*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Environmental LCA**  
Chair: Sangwon Suh

1. Module Environmental LCA: Session 4  
by *Sangwon Suh*

17:30 - 18:30 *Closure session of the ISIOA*  
Location: **(2.1) Auditorium 2**

18:30 - 20:00 *Welcome Reception for the IIOA Conference*  
Location: **(4.5) Salão Nobre (old library)**

## **Tue, 15/Jul/2014**

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08:30 - 09:00 *Opening Ceremony*

09:00 - 10:30 *Plenary Session 1*

Location: **(2.3) Auditoria Caixa Geral de Depósitos**

European Statistics for Competitiveness in a Globally Competitive World: what is the Role of Input-Output Statistics?

W.Rademacher (Director General of EUROSTAT)

G.Hewings (Former President of the IIOA and REAL- University of Illinois, US):

10:30 - 11:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

**11:00 - 12:30 Parallel Session 1**

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- Location: **(2.1) Auditorium 2**  
Topic: **(Panel Session) European Statistics for Competitiveness in a Globally Competitive World: what is the role of Input-Output Statistics?**  
Chair: Sanjiv Mahajan

1. European Commission, Directorate General of Economic and Financial Affairs by *Isabel Grilo*
2. European Commission, Directorate General of Trade by *Lucian Cernat*
3. Organisation for Economic Co-operation and Development by *Nadim Ahmad*
4. University of Groningen (Netherlands) by *Jan Oosterhaven*

- Location: **(2.2) Auditorium 3**

Topic: **Physical and Hybrid Input-Output Analysis**

Chair: Ana Isabel Guerra

1. A Hybrid Input-Output Proposal to Identify Key Sectors for the Production and Distribution of Electricity  
by *Ana Isabel Guerra*
2. Analyzing the iron flow of China by using WIO-MFA  
by *Chen Lin, Ming Liu, Makiko Tsukui*
3. Labour analysis based on Time Input-Output Tables  
by *Jaroslav Zbranek, Eva Javorská*

- Location: **(2.4) Classroom EDIFER**

Topic: **Global Value Chain Analysis**

Chair: Jennifer Taborda

1. China's economic and trade interdependencies with other BRIC countries - from a GVC Perspective by *Yaxiong Zhang*
2. Collateral Imbalances in Intra-European Trade? Accounting for the Differences between Gross and Value Added Trade Balances  
by *Robert Stehrer*
3. Identifying true trade patterns: correcting bilateral trade flows for re-exports  
by *Maureen Lankhuizen, Mark Thissen*
4. Sector relatedness, revealed comparative advantages and production in global value chains by *Jennifer Taborda*

- Location: **(3.1) Classroom 306**

Topic: **Waste Input-Output Analysis**

Chair: Koji Takase

1. An Input-Output Model of Extended Producer Responsibility: A study of the used tire management system in Portugal  
by *Joao Rodrigues, Antonio Miguel Amaral, Ines Santos Costa, António Lorena, Miguel Preto, Paulo Trigo Ribeiro*
2. Constructing a multi-regional waste input-output framework using Australian waste data by *Jacob Fry, Manfred Lenzen*
3. Repercussion of Effects of Final Consumption on Production and Environmental Loads: Detailed Multi-regional Waste Input-Output Approach in the 47 Prefectures of Japan(for a Special Session)  
by *Makiko Tsukui, Ryoji Hasegawa, Shigemi Kagawa, Yasushi Kondo*

4. The economic value and environmental impacts of food waste in Australia  
by *Christian John Reynolds, John Boland, Steven Kenway, Julia Piantadosi, Beatriz Reutter*

- Location: **(3.2) Classroom 308**

Topic: **CGE Applications to Handle Complex Data Issues**

Chair: Michael C. Huang

1. Melting Ice Caps and the Economic Impact of Opening the Northern Sea Route  
by *Hugo Rojas-Romagosa*
2. Estimation Errors in Input-Output Tables and Prediction Errors in Computable General Equilibrium Analysis  
by *Nobuhiro Hosoe*
3. A multilevel analysis of FDI: The role of big world players (China, East Asia, EU28, Japan, U.S.) in production networks and final markets  
by *Jing Zhou, Maria C. Latorre*
4. A General Equilibrium Assessment on a Compound Disaster in Northern Taiwan  
by *Michael Chun-Yang Huang, Nobuhiro Hosoe*

- Location: **(3.3) Classroom CTT Correios**

Topic: **Input-Output Economics and Network Theory I**

Chair: Ming Xu

1. Global Economic Networks: Tracking Material Flows and Money Flows, Downstream As Well As Upstream  
by *Faye Duchin, Stephen Harris Levine*
2. Mapping Knowledge Domains between Input-Output Analysis and Complex Network Analysis  
by *Yanxia Zhang, Sai Liang, Haikun Wang, Ming Xu*
3. Visualizing Core Structure of International Carbon Network Associated with Household Consumption  
by *Yasushi Kondo*

- Location: **(3.4) Classroom DELTA**

Topic: **The EXIOBASE Global MRIO database – new insights developed in the projects CREEA and DESIRE (Compiling and Refining Environmental Accounts / Development of a System of Indicators for a Resource Efficient Europe)**

Chair: Arnold Tukker

1. Calculating comprehensive material footprint indicators with a global MRIO-MFA model. The case of EXIOBASE 2.0 (for special session on CREEA)  
by *F. Stephan Lutter, Stefan Giljum*
2. Calculating comprehensive water footprint indicators with a global MRIO model. The case of EXIOBASE 2.0 (for special session on CREEA)  
by *F. Stephan Lutter, Stephan Pfister*

3. Land, energy, and carbon embodied in international trade: Evidences from CREEA model  
by *Moana Simas, Edgar G. Hertwich, Richard Wood*

- Location: **(3.8) Classroom UNICRE**

Topic: **SAM applications**

Chair: Utz Reich

1. Mechanisms of distributing national income: a comparative SAM analysis of Canada, Germany, and Portugal  
by *Utz Peter Reich*
2. Studying the informal aspects of the activity of countries with Social Accounting and Socio-Demographic Matrices  
by *Susana Santos*
3. The SAM as a tool of economic data base architectural design. The case of Chile: 2008-2011  
by *José Orlando Venegas*

- Location: **(4.1) Lecture Theatre 1**

Topic: **Effects of Infrastructure Investments**

Chair: Antonio Carlos Moretto

1. Effects of demand shocks in the Brazilian economy: new production and value added multipliers  
by *Antonio Carlos Moretto, João Dias, João Carlos Lopes, Rossana Lott Rodrigues*
2. EVALUATING THE SOCIOECONOMIC EFFECTS OF THE INTERNATIONAL EXPO ZARAGOZA 2008 FROM AN INPUT-OUTPUT PERSPECTIVE  
by *Raquel Langarita, Rosa Duarte, Sofía Jiménez, Julio Sánchez Chóliz*
3. Impact of Infrastructure Investment on Quality of Job Creation: Closed Input-Output Analysis for Indian States  
by *Anushree Sinha, Rajesh Jaiswal, Avantika Prabhakar*
4. Income Effects of Cash Subsidy Payment, Social Accounting Matrix Approach: The Fixed Price Multiplier  
by *Fatemeh Bazzazan*

- Location: **(4.2) Lecture Theatre 3**

Topic: **Trade and Value Chains**

Chair: Quanrun Chen

1. Changes in trade balances with the paradigm shift from gross to value added terms among BRICs, the USA, the EU and Japan  
by *Masaaki Kuboniwa*
2. China's Domestic Value Chains and CO2 Emissions  
by *Bo Meng, Lin Guo, Jinjun XUE*

3. Dissecting Trade Imbalances in the Eurozone: A WIOD Analysis  
by *Ariel Luis Wirkierman, Nadia Garbellini*
4. Distinguishing the Processing Trade in the World Input-Output Table: A Case of China  
by *Quanrun Chen, Xiangyin Chen, ZHU Kunfu, Peng Liu, Cuihong Yang, Lianling Yang*

• Location: **(4.3) Lecture Theatre 4**  
Topic: **Regional Input-Output Modeling**  
Chair: Eduardo Amaral Haddad

1. Empirical Evidence on the Use of the FLQ Formula for Regionalizing National Input-Output Tables: The Case of the Province of Córdoba, Argentina  
by *Anthony Travers Flegg, Leonardo Javier Mastronardi, Carlos Adrian Romero*
2. Endogenous Local Government Spending and Fiscal Multipliers in a Metropolitan Input-Output System by *Eduardo Amaral Haddad, Michael L Lahr*
3. The economic impact of the artisanal fishing fleet: an application of input-output analysis for the case of Asturias (Spain)  
by *Laura García de la Fuente, Esteban Fernandez Vazquez, Carmen Ramos*
4. The long-run performance of R&D investment in a small open regional economy by *Giorgio Garau, Patrizio Lecca, Giovanni Mandras*

12:30 - 14:00 *Lunch*

Location: **G. Francesinhas II Building - Canteen**

**14:00 - 15:30 Parallel Sessions 2**

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• Location: **(2.1) Auditorium 2**  
Topic: **CGE and Econometric Input-Output Modeling**  
Chair: Francesca Severini

1. ECONOMIC AND POVERTY IMPACTS OF INCREASING OIL PRICES AND SUGGESTED POLICY RESPONSE: The Case for Indonesia  
by *Guntur - Sugiyarto*
2. Economic policy effects and financial crisis: a dynamic CGE model for Italy  
by *Francesca Severini, Irfan Ahmed, Maurizio Ciaschini, Rosita Pretaroli, Claudio Soggi*
3. Economy-wide rebound effects from an increase in efficiency in the use of energy: the Italian case by *Giovanni Mandras, Giorgio Garau, Patrizio Lecca*
4. Employment effects of electricity generation from renewable energy technologies in the UK by *Carla Oliveira Henriques, Natalie Cassidy, Dulce Coelho*

- Location: **(2.2) Auditorium 3**

Topic: **Material Flow/Stock Analysis and Input-Output Modelling I**

Chair: Keisuke Nansei

1. Calculating comprehensive material use and productivity indicators: a review of MRIO-MFA and other methodological approaches (for special session on MFA & IO modelling)  
by *F. Stephan Lutter, Stefan Giljum*
2. Convergence between the Eora, WIOD, EXIOBASE, and OpenEU's consumption-based carbon accounts by *Daniel Moran, Edgar G. Hertwich, Richard Wood*
3. Resource logistics analysis of agricultural nutrients focusing on phosphorus and nitrogen flows (for special session on MFA & IO modelling)  
by *Kazuyo Matsubae, Tetsuya Nagasaka, Kenichi NAKAJIMA, Keisuke Nansai*

- Location: **(2.4) Classroom EDIFER**

Topic: **Global Value Chain Analysis**

Chair: Cuihong Yang

1. A New Interregional Input Output Table for China: Construction and Application  
by *Yuwan Duan, Erik Dietzenbacher, Bart Los, Cuihong Yang*
2. Cross-border Allocation of Employment in Global Value Chains: A Measurement Using International IO Decomposition Techniques  
by *Bo Meng, Jiemin Guo*
3. Gravity Models, Interregional Input-Output, and Trade in Value Added: A New Approach Applied to Brazil Internal and International Trade  
by *Jean Marc SIROEN, Joaquim Jose Martins Guilhoto, Ayç&#305;l YÜCER*
4. Value Added regional growth decomposition: structural and demand-led regional economic growth by *Mark Thissen*

- Location: **(3.1) Classroom 306**

Topic: **Environmental Input-Output Modeling**

Chair: Ricardo Luis Lopes

1. Assessing the Impacts of Water Prioritization Strategies Using Dynamic Input-Output Modeling  
by *Sheree Ann Pagsuyoin, Joost Reyes Santos*
2. Statistical Dependence Modeling of Hurricane Impacts on Regional Workforce Sectors by *Joost Reyes Santos*
3. The Effects of Sectoral and Regional Partial Participation of Global Warming Mitigation Coalitions based on Multiregional and Multisectoral Dynamic Energy Economic Model THERESIA  
by *Shunsuke Mori*

4. The energy consumption and the CO<sub>2</sub> emissions in different income class in Sao Paulo state and rest of Brazil: The IRIO approach  
by *Ricardo Luis Lopes, Joaquim Jose Martins Guilhoto*

- Location: **(3.2) Classroom 308**  
Topic: **Emerging Developing Countries**  
Chair: Matias Piaggio

1. A Comparative Kernel Structure of Mexico, Brazil and South Korea: A Pretopological Input-Output Analysis.  
by *Fernando Vázquez-Bravo, Enrique Gutierrez-Carreras, Ana Sofía Malagamba*
2. Financial and Social Accounting Matrices for Brazil  
by *Erika Burkowski, Fernanda Finotti Cordeiro Perobelli, Fernando Salgueiro Perobelli*
3. INPUT OUTPUT MODELING OF UTILIZATION OF ENERGY RESOURCES AS BASE OF GROWTH OF EMERGING MARKET ECONOMY OF INDIA  
by *Shri Prakash, GAUTAM NEGI*
4. Looking for virtuous structural change in Uruguay: Linkages of medium and high technological sectors by *Matías Piaggio, Erik Dietzenbacher*

- Location: **(3.3) Classroom CTT Correios**  
Topic: **Input-Output Economics and Network Theory II**  
Chair: Shigemi Kagawa

1. Analyzing Instability of Industrial Clustering Techniques  
by *Shunsuke Okamoto, Shigemi Kagawa, Keisuke Nansai*
2. Key CO<sub>2</sub> emission clusters accelerates world CO<sub>2</sub> emissions  
by *Shigemi Kagawa, Klaus Hubacek, Jan Christoph Minx, Keisuke Nansai, Sangwon Suh, Thomas Oliver Wiedmann*
3. The Economic Gains and Environmental Losses of US Consumption: A Social Network and Input-Output Approach  
by *Christina Prell, Kuishuang Feng, Klaus Hubacek, Laixiang Sun*
4. The structure of global virtual water trade network  
by *Sai Liang, Ming Xu*

- Location: **(3.4) Classroom DELTA**  
Topic: **Supply, Use and IO Tables: Global value chains, economic growth and environment**  
Chair: José M. Rueda-Cantucho

1. Interregional feedbacks revisited from a global value chain perspective  
by *Erik Dietzenbacher, Michael L Lahr*

2. Using the Input-Output Approach to Measure Participation in GVCs: The Case of Costa Rica  
by *David Ricardo Bullon, Satoshi Inomata, Tayutic Mena Retana, Bo Meng, Gabriela Saborio, Natalia Sánchez*
3. Two aspects to the economic growth: a SUT based attribution method and net export method  
by *Zlatina Balabanova, Ilja Kristian Kavonius*
4. Eurostat's regular estimations of CO2 emissions from final use of products in the EU  
by *Stephan Moll*

- Location: **(3.5) Classroom IAPMEI**

Topic: **Consumption-Based Carbon Policies and IO Modeling**

Chair: Kirsten S. Wiebe

1. Carbon emissions – the relevance of consumption-based accounting and policy  
by *Kirsten Svenja Wiebe, Arnold Tukker*
2. Integrating emissions transfers into international and national policy-making  
by *Marco Springmann*
3. The UK Emergency Carbon Plan  
by *Kate Scott, John Barrett*
4. Consumption-based carbon policies from a top-down and a bottom-up perspective  
by *Kirsten Svenja Wiebe, Simon Gandy, Christian Lutz*

- Location: **(3.6) Classroom MILLENNIUM bcp**

Topic: **Addressing Resource Challenges in a Globalized Economy I**

Chair: Rosa Duarte

1. Access to Resources and Resource Rents  
by *Faye Duchin*
2. Creating Multiregional Input-Output Flow Tables for Scenarios about the Future from the Outcomes of World Trade Model Calculations  
by *Stephen Harris Levine*
3. World Trade Model for freshwater fish and water type change scenarios  
by *Ignacio Cazcarro, Faye Duchin*

- Location: **(3.8) Classroom UNICRE**

Topic: **Input-Output Analysis for Policy Making**

Chair: Andrea Karim El Meligi

1. Economic Impact of Social Protection Programmes in India: A Social Accounting Matrix Multiplier Analysis  
by *Akhilesh Kumar Sharma*

2. Evaluating the impact of alternative fiscal policy measures on public debt and on GDP with an input-output based model – application to Portugal  
by *Ana Maria Dias, Emídio Graça Lopes*
3. Foreign Aid and the Environment: A Critical Analysis using MRIO  
by *Adolf Acquaye*
4. Labor force requirement and return migration policy in Romania  
by *Andrea Karim El Meligi, Maurizio Ciaschini, Nicoleta Anca Matei, Claudio Soggi*

- Location: **(4.1) Lecture Theatre 1**

Topic: **Input-output analysis for policy making**

Chair: Anushree Sinha

1. INPUT OUTPUT MODELING OF UTILIZATION OF ENERGY RESOURCES AS BASE OF GROWTH OF INDIAN ECONOMY  
by *GAUTAM NEGI, Shri Prakash*
2. Rescue the 3H region from water resources crisis: the role of virtual water versus real water transfer  
by *Zhuoying Zhang, Na Li, Minjun Shi, Hong Yang*
3. The Impact of Exchange Rate on Exports Goods Price Indices in Iran  
by *Vahid Taghinezhad Omran, Nooraddin Sharify, Tahereh Valinejad Ahangaree*

- Location: **(4.2) Lecture Theatre 3**

Topic: **CGE and Econometric Input-Output Modeling**

Chair: Guntur Sugiyarto

1. A CGE Analysis of Educational Opportunities, Human Capital, and Regional Income Distribution Using Regional SAM  
by *Iman Haqiqi, Morteza Mortazavi Kakhki*
2. Identifying the hindrance to increased trade flow between India and Bangladesh by *Chandrima Sikdar*
3. OPTIMAL COMMODITY TAXATION IN THE SECOND BEST SITUATION  
by *Guntur - Sugiyarto*
4. The Impact of Connectivity Infrastructure Development in Indonesia  
by *Anda Nugroho, Hidayat Amir*

- Location: **(4.3) Lecture Theatre 4**

Topic: **Impact Analysis: Multipliers**

Chair: Jalal Ali

1. Comparing Demand and Supply Multipliers: A Computable General Equilibrium Approach  
by *Francisco Javier De Miguel-Velez, Maria Llop, Antonio Manresa*
2. Direct and indirect effects of technology transfer through foreign direct investments: The case of Slovakia  
by *Jozef Kubala*
3. Disaggregation of Economic sub-sectors based on Optimal Development in the Spanish Economy by *Margarita Barrera-Lozano, Alfredo José Mainar Causapé, José Vallés Ferrer*
4. Stochastic Input-Output Analysis and Extensions: A Case Study of the United States  
by *Jalal Ali, Joost Reyes Santos*

15:30 - 16:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

16:00 - 16:30 *Flash Session 1*

**16:30 - 18:00 Parallel Sessions 3**

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- Location: **(2.2) Auditorium 3**

Topic: **International Trade**

Chair: Itzel Guadalupe Vázquez López

1. Analysing Effects of International Trade on Global Income and Employment  
by *Ali Alsamawi, Manfred Lenzen, Joy Murray*
2. DYNAMISING TRADE IN A DOMESTIC INPUT-OUTPUT MODEL – TINFORGE  
by *Anke Michaela Mönnig, Kirsten Svenja Wiebe, Marc Ingo Wolter*
3. Human Capital Embodied in China's International Trade by *Huijuan Wang*
4. The new structure of international trade: the participation and position of countries in global value chains.  
by *Itzel Guadalupe Vázquez López, Leobardo Enriquez Hernandez, Victor Antonio Romero Ramirez*

- Location: **(2.4) Classroom EDIFER**

Topic: **Impact Analysis: Multipliers**

Chair: Karim Monem

1. Economic Impact of Climate change in Iran- SAM Approach  
by *Fatemeh Bazzazan*

2. IMPACT OF NATIONAL FOOD SECURITY ACT (NFSA) ON THE INDIAN ECONOMY: AN APPLICATION OF MODIFIED LEONTIEF AND GHOSH MODEL  
by *Priyam Sengupta, Kakali Mukhopadhyay*

3. Socio-economic Impacts of Renewable Electricity Diffusion in Rural India by *Amrita Goldar*

4. The use of centre-coefficients in io-modeling  
by *Karim Monem, Christian Lager*

- Location: **(3.1) Classroom 306**  
Topic: **CGE and Econometric Input-Output Modeling**  
Chair: Cristina Sarasa

1. A CGE Analysis of Welfare and Sectoral Impacts of Removing Interest Rate Subsidies: A Model Based on Financial SAM and Flow of Fund Accounts  
by *Iman Haqiqi, Marziyeh Bahalou Horeh, Mahdi Ghaemi*

2. A Comparison of CGE and IO models in analysis of Water Scarcity and Climate Change by *Iman Haqiqi*

3. Assessment of Fiscal Incentive to Support the Development of Renewable Energy in Indonesia  
by *Hidayat Amir, Anda Nugroho, Verina Januati Wargadalam*

4. Biofuels, technological change and uncertainty: Evidence from France  
by *Cristina Sarasa, Virginie Doumax-Tagliavini*

- Location: **(3.2) Classroom 308**  
Topic: **The BOK-IDE-SIC Transnational Interregional Input-Output Project**  
Chair: Satoshi Inomata

1. Transnational Interregional Input-Output Analysis: from the perspective of Japan  
by *Satoshi Inomata, Bo Meng*

2. Transnational Interregional Input-Output Analysis: from the perspective of the People's Republic of China  
by *Yaxiong Zhang, Jianqin Yuan*

3. Transnational Interregional Input-Output Analysis: from the perspective of the Republic of Korea by *Jihyeon LEE, Wooki Lee*

- Location: **(3.3) Classroom CTT Correios**  
Topic: **Input-Output Accounts and Statistics**  
Chair: Carmela Squarcio

1. A Methodology for Constructing Time Series of Input-Output Accounts based on the uniform classification (Russian Experience)  
by *Elena Alekseevna Staritsyna, Eduard Filaretovich Baranov, Igor Alexandrovich Kim, Dmitri Piontkovski*

2. Net Indirect Taxes and Sectoral Structure of Economy  
by *Emilian Dobrescu*
3. Full Integration of the Industry Accounts for the United States  
by *Carol Elizabeth Moylan*
4. The Italian experience for estimating a regional production table.  
by *Carmela Squarcio, Sandra Maresca*

- Location: **(3.4) Classroom DELTA**

Topic: **Material flow/stock analysis in input-output modelling II**

Chair: Shigemi Kagawa

1. Change in supply security footprints of critical metals induced by Japanese household consumption from 2005 to 2035 (for special session on MFA and IO model)  
by *Yosuke Shigetomi, Keisuke Nansai, Susumu Tohno*
2. Integrating Material Flow and Input-Output Data: All Is Not Said and Done  
by *Anke Schaffartzik, Nina Eisenmenger, Dominik Wiedenhofer*
3. IO-MFA-based linear programming for the quality-oriented End-of-Life vehicle scrap recycling (for special session on MFA & IO modelling)  
by *Hajime Ohno, Yasushi Kondo, Kazuyo Matsubae, Tetsuya Nagasaka, Kenichi NAKAJIMA, Shinichiro Nakamura*
4. Supply security footprints on critical metals with a global link input-output model (for special session on MFA & IO modelling)  
by *Keisuke Nansai, Shigemi Kagawa, Yasushi Kondo, Kenichi NAKAJIMA, Yosuke Shigetomi, Sangwon Suh*

- Location: **(3.5) Classroom IAPMEI**

Topic: **Regional Input-Output Modeling**

Chair: Yongming Huan

1. Carbon trading and its provincial economic impact: a multi-regional Input Output analysis by *Yan Xia*
2. Development of Input-Output Tables in Russia: Experience of the Republic of Buryatia by *Zorikto Bato-Dugarovich Dondokov, Konstantin Pavlovich Dyrkheev*
3. Evaluation of Tottori economic growth strategies based on a forecasted input-output table of the year 2020  
by *Ryoko Morioka, Koji Tsuda*
4. Cross-Hauling and Regional Input-Output Tables: The Case of the Province of Hubei, China  
by *Yongming Huang, Anthony Travers Flegg, Timo Tohmo*

- Location: **(3.7) Classroom Santander Totta**

Topic: **Input-Output Analysis for Policy Making**

Chair: Christian Lutz

1. Economic evaluation of climate protection measures in Germany  
by *Christian Lutz*
2. Socioeconomic consumption modelling in an input-output model  
by *Britta Stöver, Thomas Drosdowski, Marc Ingo Wolter*
3. Technology transfer, economic development and carbon emissions – an Input-Output analysis for India by *Barun Deb Pal*
4. Using gross and base measures of output to explore the relationship between export expansion and import substitution.  
by *David Kay, Greg Alward, Stephen Cooke, Philip Watson*

- Location: **(3.8) Classroom UNICRE**

Topic: **Input-Output and the Network Theory**

Chair: Fidel Aroche Reyes

1. A pretopological analysis for amplification and absorption effects in the economical structure: a comparison among Mexico with center, center-periphery and periphery countries  
by *Oscar Córdoba Rodríguez, ERIK AARON JIMENEZ*
2. MODELLING ECONOMIC STRUCTURES FROM A QUALITATIVE INPUT-OUTPUT PERSPECTIVE: GREECE IN 2005 AND 2010  
by *FIDEL AROCHE, Ana Salomé García Muñiz*
3. Network analysis of embodied water circulation using input-output model of socio-economic resource flows by *Delin Fang*
4. On the importance of manufacturing sectors for economic development – Indications from a refined Product Space  
by *Alexander Radebach, Hauke Schult, Jan Christoph Steckel*

- Location: **(4.1) Lecture Theatre 1**

Topic: **Environmental Input-Output Analysis**

Chair: Ana Serrano Gonzalez

1. Impact assessment of green investment on environmental sectors in Japan using input-output analysis by *Ambiyah Abdullah, Xin Zhou*
2. Integrated Modeling of the Land Use, Water and Energy Nexus of Brazilian Biofuels Expansion under Climate Change  
by *William Wills, Romulo Neves Ely, Marcelo Moreira*

3. Dissaggregating agricultural water flows in the world  
by *Ana Serrano González, Rosa Duarte, Dabo Guan*

18:00 - 19:00 *ESR Editors Meeting*

19:00 - 21:00 *IIOA Padel Tennis Competition*

Location: **Nacional Padel Club: [www.nacionalpadel.com](http://www.nacionalpadel.com)**

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### **Wed, 16/Jul/2014**

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09:00 - 10:30 *Plenary Session 2*

Location: **(2.3) Auditoria Caixa Geral de Depósitos**

Joaquim J.M. Guilhoto (University of Sao Paulo): The Construction and Policy Relevance of Inter-regional IO Tables

Mike Lahr (Rutgers University): IO in an Imperfect World: Unfettered Trade, Aggregation, Disclosure Problems, and Rare Surveys

10:30 - 11:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

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### **11:00 - 12:30 Parallel Sessions 4**

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- Location: **(2.2) Auditorium 3**

Topic: **Input-Output Analysis of Tourism**

Chair: [Elisabeth Valle](#)

1. The Arts and Cultural Production Satellite Account  
by *David B. Wasshausen, Paul Vincent Kern, Steven L Zemanek*
2. Tourism interactions and redistribution effects in the Balearic Islands: A SAM analysis  
by *Elisabeth Valle, Clemente Andrés Polo*
3. Estimating the economic impact of tourism industry through the MM approach  
by *Rosita Pretaroli, Yousaf Ali, Maurizio Ciaschini, Francesca Severini, Claudio Soggi*
4. Modelling Rural Economies (MORE)  
by *María del Carmen Delgado López, Manuel Alejandro Cardenete Flores, Patricia D. Fuentes Sagar, Sergio Gomez y Paloma, CARMEN LIMA, Alfredo José Mainar Causapé, Sébastien Mary, José Manuel Rueda-Cantucho, Fabien Santini*

- Location: **(2.4) Classroom EDIFER**

Topic: **CGE and Econometric Input-Output Analysis**

Chair: [Maria Teresa Alvarez Martinez](#)

1. Taxing Diamonds to Reduce Unemployment in Namibia: Would it Work?  
by *Maria Teresa Alvarez-Martinez*

2. Designing the Health Care Services through dynamic CGE approach  
by *Francesca Severini, Maurizio Ciaschini, Rosita Pretaroli, Claudio Socci*

- Location: **(3.1) Classroom 306**  
Topic: **Input-Output Analysis of Desasters**  
Chair: Elco Eduard Koks

1. LIDAR-Based Framework for Integrating Local-specific Vulnerability Conditions in Deriving Perturbations to the Dynamic Inoperability Input-Output Model  
by *Joanna Zomil Resurreccion, Enrico C Paringit, Joost Reyes Santos*
2. P-Graph Approach for the Optimal Allocation of Human Resources to Economic Sectors in Crisis Conditions  
by *Kathleen Bernardo Aviso, Christina de Joya Cayamanda, Anne Maybelle Ramores Danga, Michael Baliwag Promentilla, Joost Reyes Santos, Raymond Roca Tan, Krista Danielle Sy Yu*
3. Regional economic impacts of the 2013 heavy flooding events in Germany  
by *Johannes Többen, Thomas Schröder, Hagen Schulte in den Baeumen*
4. The economic-wide consequences of large-scale floods. An application of a European interregional input-output model  
by *Elco Eduard Koks*

- Location: **(3.2) Classroom 308**  
Topic: **Input-Output and the Network Theory**  
Chair: Martha Gabriela Alatraste Contreras

1. A pretopological analysis for amplification and absorption effects in the economical structure: a comparison of Mexico with center, center-periphery and periphery countries  
by *José Manuel Márquez Estrada*
2. Production Linkages and Network Analysis Approaches: Creative Industries of Scottish Economy  
by *Maria Markaki, Athena Belegri-Roboli, CHRYSANTHI CHATZIDIMITROGLOU*
3. The electronic, computer and telecommunication sector in the input-output matrix for 2003, 2008. A network approach.  
by *Raul Peon, Rafael César Bouchain*
4. The Impact of Final Demand and Technology Shocks on the French Input-output Network  
by *Martha Gabriela Alatraste Contreras*

- Location: **(3.3) Classroom CTT Correios**  
Topic: **Global Value Chain Analysis**  
Chair: Bernhard Michel

1. Downstream Offshoring and Firm-level Employment - Evidence for Belgian Manufacturing Firms  
by *Bernhard Michel, Bruno Merlevede*

## 2. Global Value Chains and Development

by *Victor Kümmitz*

## 3. The Offshoring of Business Functions in Global Supply Chains: Implications for Incomes and Jobs

by *Gaaitzen de Vries, Robert Stehrer, Marcel Timmer*• Location: **(3.4) Classroom DELTA**Topic: **Supply, Use and IO Tables: Methodology and Comparability**Chair: Antonio F. Amores

## 1. Compilation of use tables at basic prices and split to domestic production and imports in

Hungary by *Forgon Mária, Eva Varga*

## 2. Comparing constant and current price multipliers for

Belgium by *Bart Hertveldt, Caroline Hambÿe, Bernhard Michel*

## 3. Updating Supply, Use and Input-Output Tables from the perspective of the revised UN Handbook of IO Analysis and Compilation

by *José Manuel Rueda-Cantucho*

## 4. Methodology to estimate European matrices of VAT, other taxes and subsidies on products

by *Antonio F. Amores, Marisa Asensio Pardo, Elena Márquez Ordóñez, Cesar Martin Nuñez, José Manuel Rueda-Cantucho*• Location: **(3.5) Classroom IAPMEI**Topic: **Input-Output Analysis for Policy Making**Chair: Eduardo Barata

## 1. The effect of cash subsidies removal of three household deciles on income distribution and production in Iran

by *Hadi Mousavi-Nik, Mohamadreza Abdolahi, Fatemeh Azizkhani, Sholeh Bagheri Pormehr*

## 2. Multiregional Input-Output Analysis of the EAFRD effectiveness: Economic, social and environmental performance

by *Fabio Monsalve, Maria Angeles Cadarso, Maria A. Tobarra-Gomez, Jorge Enrique Zafrilla*

## 3. Application of EE-IO models in the Flemish policy context : examples and requirements

by *Evelien Dils, Theo Geerken, Ann Van der Linden, An Vercalsteren*

## 4. An Input-Output Model with Resource-Constrained Sectors: An Application to the Agri-Food Development Strategy in the Context of a Portuguese Bi-Regional Model

by *Eduardo Barata, Luís Cruz, Pedro Nogueira Ramos, Ana Lucia Marto Sargento*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Environmental Input-Output Modeling**  
Chair: Javier Leon Castaneda

1. Alternative approach to measure the emissions embodied in value added and resulting income-based emissions  
by *Bin Su, Beng Wah Ang*
2. An integrated MRIO - CGE model for studying water and production reallocations in Spain  
by *Cristina Sarasa, Ignacio Cazcarro, Rosa Duarte, Julio Sánchez Chóliz*
3. Identifying key sectors for Green Growth in India: An Environmental Social Accounting Matrix multiplier analysis  
by *Barun Deb Pal*
4. Implications of U.S. and China trade in the Green House Gases generation, 2000-2010  
by *CASTAÑEDA LEÓN JAVIER, José Trinidad Vivanco*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Productivity and Efficiency Analysis**  
Chair: Ariel Luis Wirkierman

1. Efficiency measures of industrial symbiosis network using enterprise input-output analysis  
by *Luca Fraccascia, Vito Albino, Achille Claudio Garavelli*
2. HOW COMPETITIVE IS CHINESE INDUSTRY? – Decomposing Skilled and Unskilled Labor Costs in an Input-Output  
by *Keiko Ito, Harry X Wu*
3. Labor productivity changes and wages: Cost-push effects  
by *Martin Lábaj, Mikulas Luptacik*
4. Yeasty vs. mushroom-like patterns of hyper-integrated productivity growth: An analysis of six advanced industrial economies  
by *Ariel Luis Wirkierman*

- Location: **(4.1) Lecture Theatre 1**  
Topic: **Global Value Chain Analysis**  
Chair: Bart Los

1. The Death of the Distance Puzzle  
by *Bart Los, Pieter IJtsma*
2. Made in the Region, Sold in the World. New Evidence on the Internationalization of Supply Chains  
by *Sebastien Miroudot, Olle Grunewald, Hakan Sten Nordstrom*

3. Determinants of Trade in Value-added: Market Size, Geography and Technological gaps by *Eiichi Nakazawa, Colin Webb, Norihiko Yamano*
4. Goods for processing: the case of Russia by *Natalia Ustinova, Irina Masakova*

- Location: **(4.2) Lecture Theatre 3**  
Topic: **Input-Output accounts and statistics**  
Chair: Ronald L Horst

1. Assessing the estimation accuracy of LQ method for regionalization of input coefficients: a case study in Japan by *Kazuki Tamesue*
2. Construction of China's Input-Output Table Time Series for 1980-2010: A Supply-Use Table Approach by *Harry X Wu*
3. The Statistical Reconciliation of Time Series of Accounts after a Benchmark Revision by *Tommaso Di Fonzo, Baoline Chen, Marco Marini*
4. The Supply Side of Health Care by *Ronald L Horst, Douglas Shannon Meade, Douglas E Nyhus, Jeffrey F Werling*

12:30 - 14:00 *Lunch*  
Location: **G. Francesinhas II Building - Canteen**

14:00 - 19:00 *Excursion*

## Thu, 17/Jul/2014

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09:00 - 10:30 *Plenary Session 3*  
Location: **(2.3) Auditoria Caixa Geral de Depósitos**  
Ferran Sancho (University of Barcelona): CGE Modeling: A "Spin-Off" of IO Analysis? Douglas Meade (INFORUM): Some Thoughts about the Interindustry Macroeconomic Model

10:30 - 11:00 *Coffee Break*  
Location: **(2,3,4.c) Cloisters - Coffee Breaks**

### Location 11:00 - 12:30      Parallel Sessions 5

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- Location: **(2.2) Auditorium 3**  
Topic: **World input-output modeling and databases I**  
Chair: Rob Levy

1. A new flexible, extensible model of the global economy with input-output models at its heart by *Rob Levy*

2. Decoupling and Sources of Structural Transformation of Emerging Asian Economies? An International Input-Output Decomposition Analysis  
by *Jong-Hwan Ko*

3. Enhancing the Eora MRIO database  
by *Diana Carneiro, Keiichiro Kanemoto, Manfred Lenzen*

- Location: **(2.4) Classroom EDIFER**  
Topic: **Global Value Chain Analysis**  
Chair: Hubert Escaith

1. Trade Costs, Global Value Chains and Economic Development  
by *Yuan Zi*

2. New Estimates of the Size of Tradable and Nontradable Sectors Based on World Input-Output Tables  
by *Luca Cherubini, Michele Benvenuti*

3. The Policy Space Dimensions of Trade in Value-Added  
by *Hubert Escaith*

- Location: **(3.1) Classroom 306**  
Topic: **CGE and econometric input-output modeling I**  
Chair: Jianwu He

1. Enhancing Business Resilience under Power Shortage: Effective Allocation of Scarce Electricity Based on Power System Failure and CGE Models  
by *Yoshio Kajitani, Kazuyoshi Nakano*

2. A CGE Model for Labor Migration Analysis Using Labor Micro Consistent Matrix  
by *Iman Haqiqi, Marziyeh Bahalou Horeh*

3. Impact of Urbanization on Economic Growth in China  
by *Jianwu He, Shantong Li, Sanmang WU*

4. Impacts of R&D Expenditure on Economic Growth and Structure Based on Beijing Dynamic CGE Model  
by *Hongfu Ni, Dongmei Li, Zhang Shiyun*

- Location: **(3.2) Classroom 308**  
Topic: **CGE and econometric input-output modeling II**  
Chair: Robert Andrew McDougall

1. An Approach for Stable Input-Output Coefficients  
by *Nooraddin Sharify, Mohammad Ali Ehsani*

2. Application of dynamically calculated total requirements coefficients to CGE simulation analysis  
by *Robert Andrew McDougall, Badri G Narayanan*

3. The Effects of Technological Change in Agriculture on Tropical Deforestation: An Economy-wide Analysis of Brazil  
by *Maksud Bekchanov*

- Location: **(3.3) Classroom CTT Correios**  
Topic: **CGE and econometric input-output modeling III**  
Chair: Panayotis G. Michaelides

1. MACROECONOMIC EFFECTS OF THE TRANSITION TO INFLATION TARGETING IN THE RUSSIAN ECONOMY  
by *Vadim Manavirovich Gilmundinov, Alexander Olegovich Baranov*
2. Multi-Country and Multi-Sector Oligopolistic Market Modeling by Using the BRICs International Input-Output Table 2005  
by *Tsubasa Shibata, Takashi Yano*
3. Reforming Energy Consumption Subsidies in Ukraine: A CGE Analysis by *Maksym Chepeliev*
4. Combining Input-Output (IO) analysis with Global Vector Autoregressive modeling (GVAR): Evidence from the USA  
by *Panayotis G. Michaelides, Konstantinos N. Konstantakis*

- Location: **(3.4) Classroom DELTA**  
Topic: **Supply, Use and IO Tables: Different approaches to reconcile world trade asymmetries (I)**  
Chair: Sanjiv Mahajan

1. Construction of the Trade Data for the GTAP Data Base  
by *Angel Aguiar, Mark Gehlhar, Robert Andrew McDougall, Badri G Narayanan*
2. Resolving the international trade asymmetry in Eora multi-region input-output table  
by *Keiichiro Kanemoto, Arne Geschke, Manfred Lenzen, Daniel Moran*
3. Trade reconciliation in MR EE IO – the approaches in EXIOPOL and CREEA  
by *Arnold Tukker*

- Location: **(3.5) Classroom IAPMEI**  
Topic: **CGE and econometric input-output modeling IV**  
Chair: Maria A. Tobarra-Gomez

1. An input-output analysis of energy and GHG emissions indicators of gasoline and diesel oil in Brazil by *Marcelo Pereira da Cunha, Simone Tatiane do Canto, Joaquim Eugênio Abel Seabra*
2. Do the new SNA 2008 concepts undermine Environmental Input Output Analysis?  
by *Maarten van Rossum, Roel Delahaye, Bram Edens, Rutger Hoekstra, Sjoerd Schenau*

3. Is family seasonal consumption good for the environment? Unraveling the monthly local and international trade using a MRIO  
by *Maria A. Tobarra-Gomez, Maria Angeles Cadarso, Nuria Gomez, Luis A. Lopez*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Environmental input-output modeling I**  
Chair: Haiyan Zhang

1. Economic and Environmental Impacts of Biofuel Policy in Canada by *Kakali Mukhopadhyay, PAUL J. THOMASSIN*
2. Carbon and land footprint time series of the Netherlands - integrating data from the GTAP and WIOD databases  
by *Harry C Wilting*
3. Optimizing Production in Greece under Particulate Pollution Constraints with cross-Regional Transfers  
by *DIMITRIOS HRISTU-VARSAKELIS, STELLA KARAGIANNI, MARIA PEMPETZOGLOU, Athanasios Sfetsos*
4. The role of income in household energy consumption patterns in China by *Haiyan Zhang, Michael L Lahr*

- Location: **(3.8) Classroom UNICRE**  
Topic: **Environmental input-output modeling II**  
Chair: Kakali Mukhopadhyay

1. Global Structural Change and Its Implication for CO2 Emissions  
by *Kayoko Shironitta, Shigemi Kagawa, Keisuke Nansai, Shunsuke Okamoto, Sangwon Suh*
2. Tracking Footprints at the micro and meso scale: An application to the Spanish tourism by regions and municipalities  
by *Ignacio Cazcarro, Rosa Duarte, Julio Sánchez Chóliz*
3. Water pollution and Green GDP in India  
by *Kakali Mukhopadhyay, Debesh Chakraborty*

- Location: **(4.1) Lecture Theatre 1**  
Topic: **Environmental input-output modeling III**  
Chair: Liyang Wan

1. Exploring resource efficiency through individual supply chains - precision and accuracy in analysing the impacts of apparel  
by *Konstantin Stadler, Richard Wood*
2. Financial crisis and consumption patterns effects on carbon and material footprint  
by *Luis A. Lopez, Guadalupe Arce, Manuel Morenate, Jorge Enrique Zafrilla*

3. Water energy nexus under globalization with the implications of trade policy by *Liyang Wan, YONGKAI JIANG*

12:30 - 14:00 *Lunch*

Location: **G. Francesinhas II Building - Canteen**

**14:00 - 15:30 Parallel Sessions 6**

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- Location: **(2.2) Auditorium 3**

Topic: **Environmental input-output modeling IX**

Chair: Vinicius de Almeida Vale

1. Carbon accounting and footprinting of cities using a virtual input-output laboratory by *Thomas Oliver Wiedmann, Guangwu Chen*
2. Impact of carbon based unilateral trade measures on exports from developing countries: A case study of India by *SOUVIK BHATTACHARJYA, Saswata Chaudhury*
3. INTERNATIONAL TRADE AND EMISSIONS: AN LONGITUDINAL INPUT-OUTPUT ANALYSIS by *Vinicius de Almeida Vale, Fernando Salgueiro Perobelli*

- Location: **(2.4) Classroom EDIFER**

Topic: **Global Value Chain Analysis**

Chair: Dara Taglioni

1. GVC based Comparative Advantages in the Context of International Fragmentation Production by *Yoshihiro Hashiguchi, Bo Meng, Norihiko Yamano*
2. Knowledge Spillovers through International Supply Chains by *Stela Rubínová*
3. Connecting new and old data to GVC concepts by *Daria Taglioni*

- Location: **(3.1) Classroom 306**

Topic: **Environmental input-output modeling X**

Chair: Yan Xu

1. China's Regional Structure Change and Greenhouse Gas Emissions Right: a GIS-based Multi-regional Goal Programming Input-Output Model Combining with CGE Analysis by *Xue Fu*
2. Constructing a time series of Chinese multi-region input-output tables by *Yafei Wang, Arne Geschke, Manfred Lenzen*

3. Environmental Kuznets Curve and Effects of Emission Outsourcing  
by *Yan Xu*

- Location: **(3.2) Classroom 308**

Topic: **Vertical specialization and outsourcing I**

Chair: Weilin Liu

1. Import Content of Exports and Industrialization  
by *Mohammadgholi Yousefi, Mojtaba Esfandiari Kaloukan, Hadi Mousavi-Nik, Zahra Zakeri*
2. International division of labour and countries' competitiveness: the case of Italy and Germany  
by *Nadia Garbellini*
3. Measuring the Embeddedness of China's Manufacturing in Global Value Chain  
by *Weilin Liu*

- Location: **(3.3) Classroom CTT Correios**

Topic: **Vertical specialization and outsourcing II**

Chair: Cinthia Márquez-Moranchel

1. Production- vs. consumption-based CO2 accounting: A GVCs and EKC perspective  
by *Jiansuo Pei*
2. Trade Redirection in Global Supply Chains  
by *Paul J J Veenendaal*
3. Vertical specialization: the comparison of Mexico and China economies from the Input-Output perspective by *Cinthia Márquez-Moranchel, Roberto Carlos Orozco-Morales*

- Location: **(3.4) Classroom DELTA**

Topic: **Supply, Use and IO Tables: Different approaches to reconcile world trade asymmetries (II)**

Chair: Sanjiv Mahajan

1. Asymmetries in bilateral trade statistics: challenges in harmonising trade in goods and services for linking national I-O tables  
by *Colin Webb, Norihiko Yamano*
2. Trade asymmetries reconciliation in European supply, use and input-output tables  
by *Isabelle Rémond-Tiedrez, José Manuel Rueda-Cantuche, Antonio F. Amores, Anne Foltete*
3. Compilation of US and EU supply, use and input-output tables in the European classifications and comparison of the two economies  
by *Pille DEFENSE-PALOJARV*

- Location: **(3.5) Classroom IAPMEI**

Topic: **World input-output modeling and databases II**

Chair: Rafael Bouchain

1. Investigating alternative approaches to harmonise MRIO data  
by *Arne Geschke, Keiichiro Kanemoto, Richard Wood*
2. Revisiting the "Great Trade Collapse" with the Endogenous Input-Choice Model by *Ichiro Tokutsu, Mika Saito*
3. Sectoral linkages in the knowledge economy, a comparative analysis of Mexico with OECD countries by the database: STAN-IO  
by *Rafael Bouchain, Rafael César Bouchain, Mariana Velazquez*

- Location: **(3.7) Classroom Santander Totta**

Topic: **World input-output modeling and databases III**

Chair: Luis Ortega

1. Global Economic Impacts of Severe Space Weather  
by *Hagen Schulte in den Baeumen, Manfred Lenzen, Daniel Moran, Albert Steenge*
2. THE CONSTRUCTION OF A SOCIAL ACCOUNTING MATRIX TIME SERIES FOR GTAP-BASED MODEL  
by *Raymond Mi*
3. VISUALIZATION OF INFORMATION ANALYSIS AS A TOOL FOR CLUSTER'S IDENTIFICATION OF THE GLOBAL PRODUCTION NETWORKS  
by *LUIS ORTEGA*

- Location: **(3.8) Classroom UNICRE**

Topic: **Input-Output analysis of disasters I**

Chair: Maaïke Corinne Bouwmeester

1. An Inhomogeneous Approximation-and-Update Approach to Refine Multi-Regional Input-Output Tables  
by *Leonie Wenz, Robert Bierkandt, Anders Levermann, Alexander Radebach, Jan Christoph Steckel, Sven Norman Willner*
2. Disaster and Structural Change: Case Study on the 1995 Kobe Earthquake  
by *Yasuhide Okuyama*
3. Economic impact of natural gas flow disruptions  
by *Maaïke Corinne Bouwmeester, Jan Oosterhaven*

- Location: **(4.1) Lecture Theatre 1**

Topic: **Input-Output economics and industrial ecology - LCA analysis**

Chair: Jun Lan

1. INDUSTRIAL SYMBIOSIS AS AN EMERGING PROCESS DRIVEN BY AN ENTERPRISE INPUT-OUTPUT MODEL  
by *Luca Fraccascia, Vito Albino, Ilaria Giannoccaro*
2. The added value of combining a bottom up with a top down approach for assessing the environmental impact in a specific context such as space missions  
by *An Vercauteren, Luc Bierque, Katrien Boonen, Theo Geerken, Jorrit Leijting, Ann Van der Linden*
3. Triple bottom line study of a biofuel feedstock industry  
by *Arunima Malik, Arne Geschke, Manfred Lenzen*
4. Worldwide Spatial and Temporal Structural Decomposition Analysis of Energy Consumption  
by *Jun Lan*

- Location: **(4.2) Lecture Theatre 3**

Topic: **International Trade II**

Chair: Rutger Hoekstra

1. On Economic Growth, Services trade exports in China  
by *Lianling Yang, Cuihong Yang*
2. The impact of antidumping on value-added generated by trade  
by *Tian Kai Lan, Cuihong Yang*
3. The role of inward FDI to service industry in China  
by *Lianling Yang, Cuihong Yang*

15:30 - 16:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

16:00 - 16:30 *Flash Session 2*

**16:30 - 18:00 Parallel Sessions 7**

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- Location: **(2.2) Auditorium 3**

Topic: **Structural change and dynamics II**

Chair: Anke Michaela Mönnig

1. Effects of household consumption patterns on employment: Evidence from Spain during the economic crisis by *Fernando Bermejo, Eladio Febrero*
2. Female participation in recent economic growth: how, who and where?  
by *Monica Serrano, Rosa Duarte*

3. High-skilled Labour Force - Impediment to Growth?

by *Anke Michaela Mönnig*

• Location: **(2.4) Classroom EDIFER**

Topic: **Global Value Chain Analysis**

Chair: Bart Verspagen

1. Globalization and the European Crisis

by *Bart Verspagen, Jan Fagerberg*

2. The Impact Analysis of TTIP on BRICs—based on dynamic GTAP model considering GVC

by *Yaxiong Zhang*

3. The snowball effect of trade liberalization in global value chains: From upstream tariff removals to downstream productivity gains

by *Dorothee Rouzet*

• Location: **(3.1) Classroom 306**

Topic: **Input-Output analysis of disasters II**

Chair: Michiya Nozaki

1. Modelling the Effects of Successive Disasters: A Dynamic Inoperability Input-Output Approach

by *Krista Danielle Sy Yu, Kathleen Bernardo Aviso, Michael Baliwag Promentilla, Joost Reyes Santos, Raymond Roca Tan*

2. The effects of a production disruption in a linear programming input-output model

by *Wolfgang Koller*

3. The impact of production and infrastructure shocks to the Japanese inter-regional economy: A non-linear input-output programming approach

by *Michiya Nozaki, Jan Oosterhaven*

• Location: **(3.2) Classroom 308**

Topic: **Structural change and dynamics III**

Chair: Vladimir Motorin

1. Integrated Industry-Level Production Account for the United States: Intellectual Property Products and the 2007 NAICS

by *Erich H. Strassner, Matthew Russell*

2. Intertemporal Structural Change for the convenient Economic Policy variables through the MM approach

by *Claudio Soggi, Maurizio Ciaschini, Rosita Pretaroli, Francesca Severini*

3. Matrix Homothety and GLS-based Extension of RAS Method

by *Vladimir Motorin*

- Location: **(3.3) Classroom CTT Correios**

Topic: **Input-output analysis for policy making I**

Chair: Mangat Ram Saluja

1. A structural decomposition analysis of primary energy use in Portugal by *Zeus Guevara, Joao Rodrigues, Tânia Costa Sousa*
2. Analysis on China's Urban and Rural Residents' Income Based on Structure Decomposition Analysis by *hui li*
3. Construction of Social Accounting Matrix for Andhra Pradesh for 2007-08 and Impact Analysis of MNREGA by *Mangat Ram Saluja*
4. Structural decomposition analysis of carbon footprint by *Michal Habrman*

- Location: **(3.4) Classroom DELTA**

Topic: **Input-output analysis for policy making II**

Chair: Lorenzo Toffoli

1. Economic Crisis and Labour Market Turbulence: Greek economy and its Trading Partners (2008-2013) by *Maria Markaki, Athena Belegri-Roboli*
2. Economic Growth, Social Class Inequality and Poverty in Mexico: A Multisectorial Dynamic Model by *Moisés Espitia, Alejandro Díaz, Noé Arón Fuentes*
3. Education Services and Reallocation of Government Expenditure by *Lorenzo Toffoli, Maurizio Ciaschini, Claudio Soggi*

- Location: **(3.5) Classroom IAPMEI**

Topic: **Input-output analysis for policy making III**

Chair: Hongfu Ni

1. Estimating impacts of minimum wages on poverty across ethnic groups in Malaysia by *Mohd Yusof Saari*
2. Inter- Industry Linkages and the clustering of innovative activities: Framework for Indian Economy and National Innovation Policy by *Manoj Kumar Singh*
3. The Analysis of Relationship among Producer Service, Manufacture and Trade—Based on Chinese the provincial input-output tables of China. by *Hongfu Ni, SHiyun Zhang, Yi Zheng*
4. Wage as rent: A classical model with some neoclassical features by *Christian Lager*

- Location: **(3.7) Classroom Santander Totta**  
Topic: **Input-output analysis for policy making IV**  
Chair: YONGKAI JIANG

1. Trade in Value Added - Linking the Flemish regional EE-IO tables with (EE-)MRIO tables  
by *Maarten Christis, Theo Geerken, An Vercalsteren*
2. UK consumption-based emission reduction targets  
by *Kate Scott, John Barrett*
3. Water and carbon nexus in China's Electricity Production and Distribution Sector  
by *YONGKAI JIANG*

- Location: **(3.8) Classroom UNICRE**  
Topic: **International Trade II**  
Chair: Rutger Hoekstra

1. A Study on the Factor Content of India's Foreign Trade  
by *PARAMITA DASGUPTA*
2. Domestic Content of China's Exports and its Contributing Factors: a Structural Decomposition Analysis  
by *ZHU Kunfu, Quanrun Chen, Cuihong Yang*
3. Estimating embodied risk within global supply chains  
by *Scott John Kelly*
4. Global value chains and CO<sub>2</sub>-emissions: a conditional structural decomposition analysis  
by *Rutger Hoekstra, Bernhard Michel, Sangwon Suh*

- Location: **(4.1) Lecture Theatre 1**  
Topic: **Structural change and dynamics III**  
Chair: GUANGMING FENG

1. Sources of the changes in global industrial energy use, 1995-2009  
by *Umed Temurshoev, Luis Delgado sancho*
2. Structural changes in the Polish economy in the perspective of extracting of shale gas  
by *Mariusz Plich*
3. The Euro Area north-south structural economic divide: an input-output perspective  
by *João Carlos Lopes, João Ferreira do Amaral*
4. THE GENERALIZED DYNAMIC INPUT-OUTPUT PRINCIPLE  
by *GUANGMING FENG*

- Location: **(4.2) Lecture Theatre 3**  
Topic: **Addressing Resource Challenges in a Globalized Economy II**  
Chair: Faye Duchin

1. Anticipating Impacts of Future Agricultural Production in Africa Using Global Physical and Payment Networks by *Nathaniel Paul Springer*
2. Land Use Change and Global Adaptations to Climate Change by *Roxana Julia, Faye Duchin*
3. Strategies for Sustainable Management of Water Resources in Mexico by *Carlos A Lopez-Morales*

18:00 - 19:30 *IIOA General Assembly*

20:00 - 23:00 *Conference Dinner*  
Location: **(4.5) Salão Nobre (old library)**

## **Fri, 18/Jul/2014**

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### **09:00 - 10:30 Parallel Sessions 8**

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- Location: **(2.2) Auditorium 3**  
Topic: **Environmental input-output modeling V**  
Chair: Matías Piaggio

1. Accounting for global biomass and land flows embodied in trade – A comparison of approaches and a proposal for a way forward  
by *Martin Bruckner, Stefan Giljum*
2. Choices and consequences of sector allocation of embodied emissions in global production systems by *Maria Angeles Cadarso, Guadalupe Arce, Luis A. Lopez, Fabio Monsalve*
3. Construction subsystem and carbon dioxide emissions  
by *Matías Piaggio, Thomas Oliver Wiedmann*

- Location: **(2.4) Classroom EDIFER**  
Topic: **Environmental input-output modeling VI**  
Chair: Niaz Ahmed Bhutto

1. Carbon footprint for the University of Castilla-La Mancha  
by *Nuria Gomez, Maria Angeles Cadarso, Fabio Monsalve, Maria A. Tobarra-Gomez*
2. CHOICE OF TECHNIQUE FOR MINIMIZING GREENHOUSE GAS EMISSIONS: AN INPUT-OUTPUT EXERCISE FOR THE MEXICAN ECONOMY  
by *Pablo Ruiz-Napoles, Martín Carlos Puchet Anyul*

3. Estimating the Cost of Reducing CO2 Emissions by 17 Percent by US in 2020

by *Niaz Ahmed Bhutto, Michael L Lahr*

• Location: **(3.1) Classroom 306**

Topic: **Environmental input-output modeling VII**

Chair: Robin Frost

1. Climate Change in the Mexican Regions: Integration of the Direct, Indirect and Dynamic Effects in a Simulation Input Output Model

by *Rafael Perez Peña, Carlos Flores, Noé Arón Fuentes, Gilberto Martínez, Lucero Moreno, Lourdes Morones, Jorge Muñán, Germán Osorio, Leidy Suárez*

2. Demand decomposition and input-output subsystems analysis of the Philippine CO2 emissions by *Rachel Custodio Reyes*

3. Using supplier reported emissions information to enhance an EEIO model to estimate the GHG emissions of businesses

by *Robin Frost, Mike Berners-Lee, Nick Hewitt*

• Location: **(3.2) Classroom 308**

Topic: **Environmental input-output modeling VII**

Chair: Shigemi Kagawa

1. A Spatial Structural Decomposition Analysis of Carbon Footprint of Household Consumptions for Japanese Regions

by *Ryoji Hasegawa, Shigemi Kagawa, Yasushi Kondo, Makiko Tsukui*

2. Estimating the Economy-wide Impacts of Energy Shocks in Taiwan under a Social Accounting Matrix Framework

by *Shih-Mo Lin, Jin-Xu Lin*

3. Measuring the built environment carbon footprint: a case study of Brisbane

by *Romulo Neves Ely, Diana Carneiro, Guangwu Chen, Thomas Oliver Wiedmann*

• Location: **(3.3) Classroom CTT Correios**

Topic: **Trade, global value chains and foreign direct investment: measurement issues and impact evaluation**

Chair: Maria C. Latorre

1. Global value chains and the cost of protection

by *Susan F Stone*

2. Identifying hubs and spokes in global supply chains using redirected trade in value added by *Hugo Rojas-Romagosa, Arjan M. Lejour, Paul J J Veenendaal*

3. The impact of FDI between Japan and China: A dynamic multi-regional general equilibrium analysis by *Maria C. Latorre, Nobuhiro Hosoe*
4. The Role of Services for Competitiveness in Manufacturing by *Hildegunn Kyvik Nordas, Yunhee KIM*

- Location: **(3.4) Classroom DELTA**  
 Topic: **Supply, Use and IO Tables: Previous Year Prices**  
 Chair: Pedro Oliveira

1. Estimation of SUTs at previous year prices in Chile by *Felipe Andrés Labrín, Viviana Andrea Rosales*
2. Price and Volume Measurement for R&D in German National Accounts by *Liane Ritter*
3. Estimation of balanced PYP supply and use tables: the European experience by *Antonio F. Amores, Sanjiv Mahajan, Marisa Asensio Pardo, Elena Márquez Ordóñez, Cesar Martin Nuñez, José Manuel Rueda-Cantucho, Isabelle Rémond-Tiedrez*
4. Compilation of supply and use tables at previous years prices in Portugal by *Maria Cruz*

- Location: **(3.5) Classroom IAPMEI**  
 Topic: **Structural change and dynamics**  
 Chair: Yukinori Nakano

1. Business Cycles and Sustainable Economic Development by *Milagros Dones Tacero*
2. CHANGES IN INDIRECT DOMESTIC VALUE ADDED IN MEXICO'S MANUFACTURING EXPORTS BY SECTORS AND COUNTRIES OF ORIGIN AND DESTINATION, 1995-2011 by *Rosario Cervantes-Martinez, Gerardo Fujii*
3. Dynamic industrial change by the popularization of the front-end ICT. by *Yukinori Nakano*

- Location: **(3.7) Classroom Santander Totta**  
 Topic: **Environmental input-output modeling XI**  
 Chair: Xue Fu

1. Decompose tourism carbon footprint using the Environmental Extended Input-Output Model by *Ya-Yen Sun, Wen-Huei Chang*
2. Restructuring Regional Economic Structure to Reduce Greenhouse Gas Emissions using an Interregional Input-Output Mode by *Xue Fu, Kuishuang Feng, Klaus Hubacek, Michael L Lahr, Bo Meng, Yaxiong Zhang*

- Location: **(3.8) Classroom UNICRE**

Topic: **Regional input-output modeling I**

Chair: Carlos Flores

1. A bi-regional Input-Output model for Portugal: Centro Region and Rest of the Country  
by *André da Cruz Parreira, Eduardo Barata, Luís Cruz, João Pedro Ferreira, Pedro Nogueira Ramos*
2. A Dynamic Input-Output Model for Small Regions: The Mexican Case.  
by *Ari Beorlegui, Alejandro Brugués, Noé Arón Fuentes*
3. A Re-elaboration of the Strategic Planning Model for the Mexican Economy: An Application to Poverty Reduction Strategies.  
by *Carlos Flores, Alejandro Brugués, Noé Arón Fuentes, Germán Osorio*

- Location: **(4.1) Lecture Theatre 1**

Topic: **Regional input-output modeling I**

Chair: Petr Musil

1. A Regional Social Accounting Matrix for India 2007-08  
by *Bhupesh Yadav*
2. An Application of the Hybrid Approach to Constructing Regional Input-Output Tables: Case of Izmir, Turkey  
by *Cagacan Deger, Osman Aydogus, Elif Tunali Caliskan, Gulcin Gurel Gunal*
3. Application of MRIO model on a small economy: case study of the Czech Republic  
by *Petr Musil, Jana Kramulova*

10:30 - 11:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

**11:00 - 12:30 Parallel Sessions 9**

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- Location: **(2.2) Auditorium 3**

Topic: **Impact analysis: multipliers**

Chair: Rachel Custodio Reyes

1. Assessing the effects of trade on employment in the Philippines: A SAM-based multiplier and structural path analysis  
by *Rachel Custodio Reyes*
2. Growth, employment and public spending in the Social Accounting Matrix of the Spanish economy for 2008  
by *Alfredo José Mainar Causapé, Patricia D. Fuentes Saguar*
3. Input-Output Analysis of Turkish Construction Industry by using World Input-Output Database for 2002-2012 Period  
by *Zafer Barçın; Gül, Selim Cagatay, Reyhan Ozes, Celal Tasdogan*

- Location: **(2.4) Classroom EDIFER**  
Topic: **Regional input-output modeling III**  
Chair: Anindita Sengupta
  1. Comparative structural analysis of the Mexico economic regions, using interregional input-output models. by *ALEJANDRO DAVILA FLORES*
  2. Construction of a Multi-regional Input-Output Table for Nagoya Metropolitan Area, Japan by *Mitsuo Yamada*
  3. Construction of Regional Input-Output Tables in Practice by *Jakub Fischer, Jaroslav Sixta, Kristyna Vltavska*
  
- Location: **(3.1) Classroom 306**  
Topic: **Regional input-output modeling IV**  
Chair: Jianwu He
  1. Construction of Regional Input-Output Table in India using non-survey method: The Case of West Bengal by *Anindita Sengupta*
  2. Construction of subnational multiregional Input-Output tables: The case of Germany's federal states. by *Johannes Többen*
  3. Global Value Chains and Region Economy within China by *Jianwu He, Shantong Li, Sanmang WU*
  
- Location: **(3.2) Classroom 308**  
Topic: **Regional input-output modeling V**  
Chair: João Pedro Ferreira
  1. Gravity Based Estimation of Interregional Transactions with Monte Carlo RAS Proportioning by *Kazuhiko Nishimura, Satoshi Nakano*
  2. Productive Structure and Trade Relations: The Case of the Western Border Regions of Paraná State, Brazil by *Joaquim Jose Martins Guilhoto, Carlos Alberto Gonçalves*
  3. Spill-over effects in the Portuguese economy: Lisbon Metropolitan Area vs. Rest of the Country by *João Pedro Ferreira, Eduardo Barata, Luís Cruz, Pedro Nogueira Ramos*
  
- Location: **(3.3) Classroom CTT Correios**  
Topic: **Regional input-output modeling VI**  
Chair: Pedro Gomez
  1. Supply and Use Tables at the Municipal Level for Prospecting Electricity Markets by *Paulo de Tarso Gaeta Paixao, Carlos R Azzoni, Joaquim Jose Martins Guilhoto*

2. The construction of regional SAMs for the RHOMOLO model  
by *Lesley Potters, Francesco Di Comite, d'Artis Kanacs, Mark Thissen*
  3. The role of the Electronic, Computer and Communications sectors in the Sonora economic regional structure. by *Pedro Gomez, Rafael César Bouchain*
  4. Welfare effects of tourism consumption: A CGE model for the Galician economy  
by *Andre Carrascal, Melchor Fernandez*
- Location: **(3.4) Classroom DELTA**  
Topic: **Supply, Use and IO Tables: Future challenges in the SNA 2008/ESA 2010 (I)**  
Chair: Silke Stapel-Weber
    1. Future Challenges and changes in the new SNA 2008 and ESA 2010 by *Sanjiv Mahajan*
    2. An evaluation of the impact of the new ESA rules for Goods for Processing and Merchanting on the Belgian SUT and IO tables for 2010.  
by *Bart Maria Jan Van den Cruyce*
    3. Goods for processing: the case of Russia  
by *Natalia Ustinova, Irina Masakova*
  - Location: **(3.5) Classroom IAPMEI**  
Topic: **Methodological aspects of input-output analysis I**  
Chair: Iskander Vilevich Syrtlanov
    1. An Input-Output Model with an Expanded Composition of Endogenous Parameters: Synthesis of the Keynesian Income Multiplier and the Leontief Model  
by *Zorikto Bato-Dugarovich Dondokov*
    2. Bayesian Updating of Input-Output Tables  
by *Andrey Polbin, Oleg Lugovoy, Vladimir Potashnikov*
    3. China's Structural Adjustment of Economy and Investment for carbon emissions reduction: a turnpike in environment-input-output system  
by *Xue Fu*
    4. Comparative analysis of methods for assessing the value transfer in the formation of the final product  
by *Iskander Vilevich Syrtlanov, Alsu Sayapova*

- Location: **(3.7) Classroom Santander Totta**  
 Topic: **Methodological aspects of input-output analysis II**  
 Chair: Kathleen Bernardo Aviso
  1. Cost of production (Supply price) of Goods: Walras versus Leontief  
 by *Ezra Davar*
  2. Denton PFD and GRP benchmarking are friends. An empirical evaluation on Dutch Quarterly Supply and Use Tables  
 by *Jacco Daalmans, Tommaso Di Fonzo*
  3. Distance-based shared responsibility  
 by *Umed Temurshoev, Ronald E Miller*
  4. Fuzzy Linear Programming Approach to Updating Input-Output Technical Coefficients  
 by *Kathleen Bernardo Aviso, Michael Baliwag Promentilla, Joost Reyes Santos, Raymond Roca Tan, Krista Danielle Sy Yu*
  
- Location: **(3.8) Classroom UNICRE**  
 Topic: **Methodological aspects of input-output analysis III**  
 Chair: FIDEL AROCHE
  1. Manufacturing Industries, Final Demand and Economic Growth: Application of Econometric Analysis and Input Output Model with Indian Data  
 by *Panchanan Das*
  2. Matrix difference statistics and their use in comparing input-output databases  
 by *Anne Owen, John Barrett, Kjartan Steen-Olsen*
  3. Productivity and economic structure in under-development by *FIDEL AROCHE, Marco Antonio Marquez*
  
- Location: **(4.1) Lecture Theatre 1**  
 Topic: **Sustainable production and consumption I**  
 Chair: Maaïke Corinne Bouwmeester
  1. An Input-Output based approach to explore hidden potentials in global production chains  
 by *Hauke Schult, Armin Fügenschuh, Alexander Radebach, Jan Christoph Steckel, Ingmar Vierhaus*
  2. Environmental policy and consumer behavior under monetary budget and time constraint  
 by *Koji TAKASE, Yasushi Kondo*
  3. Flow Analysis on Products of Agriculture, Forestry, Fisheries Industry using Structural Path Analysis  
 by *Yuko Oshita, Yasunori Kikuchi*
  4. Multiple technologies in an input–output framework: the role of constrained primary resources  
 by *Maaïke Corinne Bouwmeester, Albert Steenge*

12:30 - 14:00 *Lunch*

Location: **G. Francesinhas II Building - Canteen**

**14:00 - 15:30 Parallel Sessions 10**

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- Location: **(2.4) Classroom EDIFER**

Topic: **Sustainable production and consumption I**

Chair: Ritu Sharma

1. Socioeconomic and environmental assessment of biodiesel production in Brazil  
by *Marcelo Pereira da Cunha, Joaquim Jose Martins Guilhoto, Arnaldo César da Silva Walter*
2. Socioeconomic impacts due to enlarging the use of sugarcane straw in the Brazilian Economy  
by *Terezinha de Fátima Cardoso, Antonio Bonomi, Mateus Ferreira Chagas, Luis Augusto Barbosa Cortez, Marcelo Pereira da Cunha, Joaquim Jose Martins Guilhoto*
3. Sustainable Growth of Production and Consumption in India?  
by *Ritu Sharma, Shri Prakash*

- Location: **(3.1) Classroom 306**

Topic: **Sustainable production and consumption II**

Chair: Devrim Murat Yazan

1. Technology-based criterion to share environmental responsibility by *Jorge Enrique Zafrilla, Luis A. Lopez, David Soto-González*
2. The development of commercial local area resource and emissions modelling for the food retail sector by *Peter Treharne Bradley*
3. The role of bio-product supply chains in regional bio-economy: A sustainability analysis with input-output modelling  
by *Devrim Murat Yazan, Giorgio Garau, Giovanni Mandras*

- Location: **(3.2) Classroom 308**

Topic: **Methodological aspects of input-output analysis IV**

Chair: Aleix Altimiras-Martin

1. A Nonlinear Supply-Driven Input-Output Model  
by *Nooraddin Sharify*
2. Multinational enterprises in multi-regional input output analysis by *Andrew Skelton*
3. Richard Stone's Contributions to Input-Output Analysis  
by *GianDemetrio Marangoni, Domenico Rossignoli*

4. The analytical complementarity of input- and output-driven models: theory and practice  
by *Aleix Altimiras-Martin*

- Location: **(3.3) Classroom CTT Correios**

Topic: **Productivity and efficiency analysis I**

Chair: Shogo Eguchi

1. Assessing the evolution of energy and CO2 intensities in the EU  
by *Luís Cruz, Jose Dias*
2. Characterizing Relative Performance: The Energy Efficiency Advantage of Foreign-invested Enterprises in China  
by *Xuemei Jiang*
3. Environmental Efficiency Analysis of Biodiesel from Waste Cooking Oil  
by *Shogo Eguchi, Shigemi Kagawa, Sangwon Suh*

- Location: **(3.4) Classroom DELTA**

Topic: **Supply, Use and IO Tables: Future challenges in the SNA 2008/ESA 2010 (II)**

Chair: Isabelle Remond-Tiedrez

1. Implementation of ESA 2010/SNA 2008 Into Czech Input-Output Tables  
by *Jaroslav Sixta, Petr Musil, Martina Šimková*
2. Compilation of the supply and use/input-output tables according to the ESA 2010 for Estonia  
by *Iljen Dedegkajeva*
3. Experience in implementing the SNA 2008 in Mexico's SUT and IOT for the benchmark year 2008  
by *Jose Teran-Vargas*

- Location: **(3.5) Classroom IAPMEI**

Topic: **Productivity and efficiency analysis II**

Chair: Sofía Jiménez

1. Global Productive Efficiency from a Input-Output framework.  
by *Miguel-Angel Tarancon, María-Jesús Gutiérrez-Pedrero*
2. Multiplier effects of change in household spending in Europe  
by *Tetyana Anatoliivna Tyshchuk*
3. Growth and Productivity in the Spanish and European economies.  
by *Sofía Jiménez, Rosa Duarte, Raquel Langarita, Julio Sánchez Chóliz*

15:30 - 16:00 *Coffee Break*

Location: **(2,3,4.c) Cloisters - Coffee Breaks Location**

16:00 - 16:30 *Flash Session 3*

16:30 - 18:00 *Plenary Session 4*

Location: **(2.3) Auditoria Caixa Geral de Depósitos**

Leontief Prize Session:

Industrial Policy and the Domestic Content of Mexico's Maquila Exports: A long-run perspective, by Juan-Carlos Castillo, Gaaitzen de Vries

Empirical estimation of non linear input-output modelling: an Entropy Econometrics approach, by Esteban Fernandez Vazquez

The Average Propagation Length: An Extended Analysis, by Quanrun Chen

Convergence between the Eora, WIOD, EXIOBASE, and OpenEU's consumption-based carbon accounts, by Daniel Moran, Richard Wood

18:00 - 18:30 *Closing Ceremony*

Nomination of IIOA fellows

19:00 - 21:00 *IIOA Padel Tennis Competition*

Location: **Nacional Padel Club: [www.nacionalpadel.com](http://www.nacionalpadel.com)**

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