

Workshop - Introduction to Complexity Economics
IV Encontro Nacional de Economia Industrial e Inovação

September 9th, 2019.

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1. Introduction

The Complexity Economics Workshop “Introduction to Complexity” aims to present to the attendees of the IV Encontro Nacional de Economia Industrial e Inovação the state-of-art of the Complexity Economics field. The course introduces and discusses the main aspects of the field, methodologies and possibilities of research.

2. Motivation

Complexity Economics is the study of economic systems as complex systems. Complex systems science has revolutionized many scientific fields and consists of interacting individuals that change their behaviors and strategies depending on the outcome they mutually create. Since the 2008 financial crisis, the complexity in economics has gained increasing interest as an alternative approach to build policy directions. In contrast to the neoclassical economics that emphasizes optimization, equilibrium, and efficiency, complexity economics stresses uncertainty, adaptation, interdependence, emergent properties and robustness.

The Workshop is composed by three main parts: Introduction to Complexity Economics, Methodologies and Research Possibilities.

The Introductory session welcomes the participants and presents to the main characteristics of the field presenting the elements that characterize the economic system as a complex evolutionary system.

The lecture on Agent Based Modeling will present some of the methodological issues for using this approach, emphasizing its contributions to the theoretical analysis, the challenges in order to become an established field and some well known examples of its application.

The lecture on Social Network Analysis will introduce the fundamentals and applications of the relational approach to understand what network analysis is and to identify when modelling and analyzing a phenomenon with networks is suitable. The lecture on Research Possibilities will discuss the frontiers of knowledge in the complexity in economics with examples, challenges and further research possibilities.

3. Schedule *

| Time | Activity |
|------------------|--|
| Morning | |
| 09:00 – 10:00 | Introduction to Complexity Economics Prof. ^a Esther and Prof. ^a Ivette |
| 10:00 – 12:00 | Methodologies: Agent-Based Modeling Prof. ^a Esther |
| Lunch | |
| Afternoon | |
| 14:00 – 16:00 | Methodologies: Social Networks Analysis Prof. ^a Ivette |
| 16:00 – 18:00 | Research Possibilities Prof. Tommaso Ciarli |

* Schedule subject to reallocations.

4. Target audience and prerequisites

Participants who are interested in the Complexity Economics field. There are no prerequisites required.

5. Time allocation

The Workshop will take place as a pre-event to the IV Encontro Nacional de Economia Industrial e Inovação with 7 hours allocated.

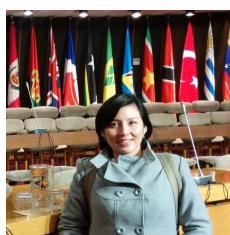
6. Further information about the presenters



Tommaso Ciarli is Senior Research Fellow at SPRU, University of Sussex. His main research interests are in the area of technological change, institutional change, and economic development. He is currently involved in several funded projects, among which: micro macro models of growth and structural change ([EC](#)), the relation between innovation, employment, and inequality ([ESRC](#), [JRF](#)), violent conflict and economic activity ([ESRC](#), [CEPR](#) and [DFID](#)), and the relation between inclusive innovation and structural change ([IDRC](#)).



Esther Dweck – Economist, Professor at the Institute of Economics/UFRJ. She has experience in macroeconomics, with emphasis on public sector, economic growth and development, working mainly on the following topics: fiscal regime and state role, demand-led growth, micro-macro integration, agent based modeling, analysis of input-output. Between June 2011 and March 2016, she worked in the Ministry of Planning, Budget and Management, in the position of Chief Economist and Federal Budget Secretary.



Ivette Luna is at the Institute of Economics at the State University of Campinas (Unicamp), with research projects at the Center for Industrial Economics and Technology (NEIT) and the Center for Agricultural Economics and the Environment (NEA). Her research focuses on the analysis of industrial dynamics and the productive structure of the Brazilian industry; the relation between innovation and economic development and more recently, the productive transformations in Latin America and its impact on regional development and new demands on labor force.

