



GSS 2015

Conference on Global Systems Science

**Everything is Connected
Equilibrium and Disequilibrium in Social, Economic and Political Systems**

*Organized by GSS projects funded by European Commission
in collaboration with Genoa Science Festival*

Genova – 28–30 October 2015

CONFERENCE PROGRAM

October 28, 2015

**Palazzo Ducale, Sala del Maggior Consiglio
Piazza Matteotti 9 – Piazza De Ferrari 2, Genova**

18.30 – 20.00

GSS Plenary Session: Searching for Simplicity and Unity in the Complexity of Life from Cells and Ecosystems to Cities, Companies and Global Sustainability

Abstract: Why do all companies and people die whereas cities keep growing and the pace of life continues to accelerate. Why do we stop growing, live of order 100 years and sleep 8 hours a day? Are cities and companies "just" large organisms? And how are these questions related to innovation, wealth creation, social networks and global sustainability? Cities and global urbanisation are the source of the greatest challenges humans have faced since becoming social. Cities are hubs of innovation, wealth creation, culture and power, but also the prime source of crime, pollution, disease, climate change and energy and resource consumption. Yet, there is no integrated, quantitative, science-based framework for understanding their dynamics, growth and organization. Ideas for such a theory, inspired by a network-based conceptual framework for understanding many fundamental properties of organisms, such as growth, metabolic rates, tumors, sleep, aging and death, and ecosystems, will be discussed. It is motivated by the observation that many characteristics of cities and companies, from wages, patents, assets and profits to diversity, crime and disease, scale systematically and predictably with size, much like organisms, suggesting underlying universal principles that transcend their history, geography, individuality and culture. This has dramatic implications for growth and long-term global sustainability.

Speaker:

Geoffrey West – Santa Fe Institute

Moderator: Luca De Biase (Il Sole 24 Ore)

October 29, 2015

**Palazzo Doria Spinola, Sala Consiliare
Largo Lanfranco 1, Genova**

09.00-09.30 Registration to GSS 2015	
09.30 – 11.00 Public GSS Conference: Global Systems Science, HPC and Big Data Abstract: Our society leaves digital traces of its activities – data. How can these data be used? Who should profit from them? High Performance Computing is reaching the level of an ultimate tool empowering Global Systems Science (GSS) to address extremely complex societal problems. By the nature of the problems addressed in typical GSS applications, the relevant datasets are mostly very big, and are expected to grow tremendously as well as to include highly heterogeneous data sources, e.g. data streams from social media. High Performance Data Analysis (HPDA) is thus the key to the success of GSS in the next decade! Organizer: Bastian Koller– HLRS Speakers: Christopher Barrett – Virginia Bioinformatics Institute Mark Parsons –The University of Edinburgh Per Nyberg – Cray Inc Bastian Koller – HLRS	
11.00-11.30 Coffee Break	
11.30 – 13.00 Public GSS Conference: Economics 2.0 – encompassing complexity and disequilibrium Abstract: Over the last few years, the greatest concern of the global political agenda has been to find a way to overcome the crisis and therefore to look for effective policy instruments and even for new theoretical economic frameworks for exploring and governing the complex global dynamics of our economic and social systems. In particular, it is crucial to explore regulations and policies that help preventing and mitigating economic and financial crises as well as fostering an economically and sustainable growth path. Complex and disequilibrium approaches to economics and finance allow us to tackle these pressing issues. Organizer: Silvano Cincotti – University of Genoa Speakers: Alan Kirman – Aix Marseille University Sheri Markose – University of Essex Luciano Pietronero – CNR Silvano Cincotti – University of Genoa	
13.00-14.15 Lunch	
14.15-15.15 GSS Young Scholar – Session A Marco D'Errico – University of Zurich Passing the hot potato: how does risk flow in the CDS market? Reynolds C. Nathanael – University of Genoa Credit-driven economic dynamics in an agent-based macroeconomics model of housing market Al_Sayed Kinda, University College London Local mechanisms of growth and differentiation in	14.15-15.15 GSS Young Scholar – Session B Marco Bardoscia – London Institute for Mathematical Science Paths towards instability in financial networks Darko Čerepnalkoski – Jozef Stefan Institute Communities in the retweet network of the European Parliament Pietro Battiston – Sant'Anna School of Advanced Studies

street networks	The radiation model of international flows
<p>15.15-15.30 GSS, MOOCS and Platforms</p> <p>Abstract: Global Systems Science has emerged from the European complex systems research community so to engage with policy and society through informatics and citizen engagement. In this context there is a major need for communicating the ideas of Global Systems Science to wide variety of communities including politicians and their officers, students and researchers, and the wider community at individual and organisational levels. These include creating appropriate and innovative educational (e.g.. MOOC – Massive Open Online Course), dissemination programmes and participation platform. This session addresses possible ways ahead for GSS education and participation and how we can work together to provide them.</p> <p>Speaker: Jeffrey Johnson – Open University</p>	
<p>15.30 – 17.00 Public GSS Conference: Finance and systemic risks in a globally connected world</p> <p>Abstract: The increasing complexity of the financial system both in terms of instruments and structure poses new challenges to financial regulation and policy making. How to assess the systemic importance of market players in complex financial networks and how to design policies to ignite a transition towards a greener economy and a more sustainable financial system? Network science, big data and ICT's meet economics and financial regulation to address some of these challenges.</p> <p>Organizer: Stefano Battiston – University of Zurich</p> <p>Speakers: Iman Van Lelyveld – Central Bank of the Netherlands Grzegorz Halaj – European Central Bank Stefano Battiston – University of Zurich</p>	
<p>17.00-17.30 Coffee Break</p>	

October 29, 2015

*Palazzo della Borsa, Sala delle Grida
Via XX Settembre 44, Genova*

<p>18.30 – 20.00 GSS Plenary Session: The Promise of Urban Science</p> <p>Abstract: For the first time in history, more than half of the world's population lives in urban areas; in just a few more decades, the world's population will exceed 9 billion, 70 percent of whom will live in cities. Enabling those cities to deliver services effectively, efficiently, and sustainably while keeping their citizens safe, healthy, prosperous, and well-informed will be among the most important undertakings in this century. I will review how New York University's Center for Urban Science and Progress is bringing informatics to the study, operation, and planning of cities. I will touch on the rational, the structural, and the substance of the Center's work and the ways in which it is enriching New York City and contributing to global issues</p> <p>Speaker: Steven E. Koonin – New York University</p> <p>Moderator: Colin Harrison (Arizona State University)</p>

October 29, 2015

GSS 2015 Conference Dinner
20.30 – 22.00

October 30, 2015

**Palazzo Doria Spinola, Sala Consiliare
Largo Lanfranco, 1, Genova**

09.30 – 11.00

Public GSS Conference: Shaping the future of urban systems – towards a new science of cities

Abstract: We are living in the era of cities: more than 50% of the world population is already living in urban areas, and most forecasts indicate that, by the end of this century, the world's population will be almost entirely urban. At the same time, cities are increasingly interconnected and, in a sense, all cities are becoming world cities. The global challenges of economic recovery, poverty eradication, environmental sustainability, climate change, or sustainable and secure energy, are all intimately linked to cities, which are simultaneously places where many of these global problems emerge and where solutions can be found. Historically, research on cities has relied on cross-sectional (static) demographic and economic datasets, often consisting of very small samples. This situation is now changing thanks to the proliferation of smart devices and interconnected services: for the first time, we have large-scale, detailed longitudinal (dynamic) data that allow us to test hypotheses about urban structure and dynamics, both from an intraurban and an interurban perspective. In this session we will explore how we can combine methods and tools from data science and systems thinking, as well as new ICT tools to engage collective action, to develop better urban theories and establish the foundations of a new science of cities enabling us to successfully tackle demographic changes and new societal trends, the tension between globalisation of markets and urban diversity, the sustainability of urban ecosystems, and other fundamental challenges associated to urban development in the 21st century.

Organizer: Colin Harrison – Arizona State University, Ricardo Herranz – Nommon Solutions and Technologies

Speakers:

Steven E. Koonin – New York University
Nathaniel Raymond – Harvard University
Lluisa Marçal – University of Girona

11.00-11.30 Coffee Break

11.30 – 13.00

Public GSS Conference: Crowdsourcing the Future – Participation in global systems science

Abstract: In a global system of systems there is no central command. Evolution is a multistakeholder process that requires micro-massive participation of very different individuals and organizations. However such a process cannot be left to luck or endless negotiations between individual agents or we will quickly end in crisis and chaos. Design is the key to steer decision processes to include the greatest number of participants, find alignments between divergent interests, and deliver positive results. In this session we will explore case studies on how different design techniques have been effective at this purpose in several domains such as policy, public services, etc.. This is the key to crowdsource our shared future.

Organizer: Filippo Addarii – Young foundation and PlusValue, Fiorenza Lipparini – PlusValue

Speakers:

Kat Austen – lilab.org
Elisa Finocchiaro – Change.org
HyoKwan Jeon – City of Seoul
Indy Johar – Project00.cc
Juha Koivisto and Pasi Pohjola – Innovillage

13.00-13.15

GSS Young Scholar Award Ceremony

13.15-13.30

Closing of conference and farewell

Demonstration and experimentation

Palazzo Ducale, Porticato Interno

Piazza Matteotti 9 – Piazza De Ferrari 2, Genova

GSS Demonstration Session 1 October 29, 2015 10.00-17.00	Running live
GSS Demonstration Session 2 October 30, 2015 10.00-15.00	Running live

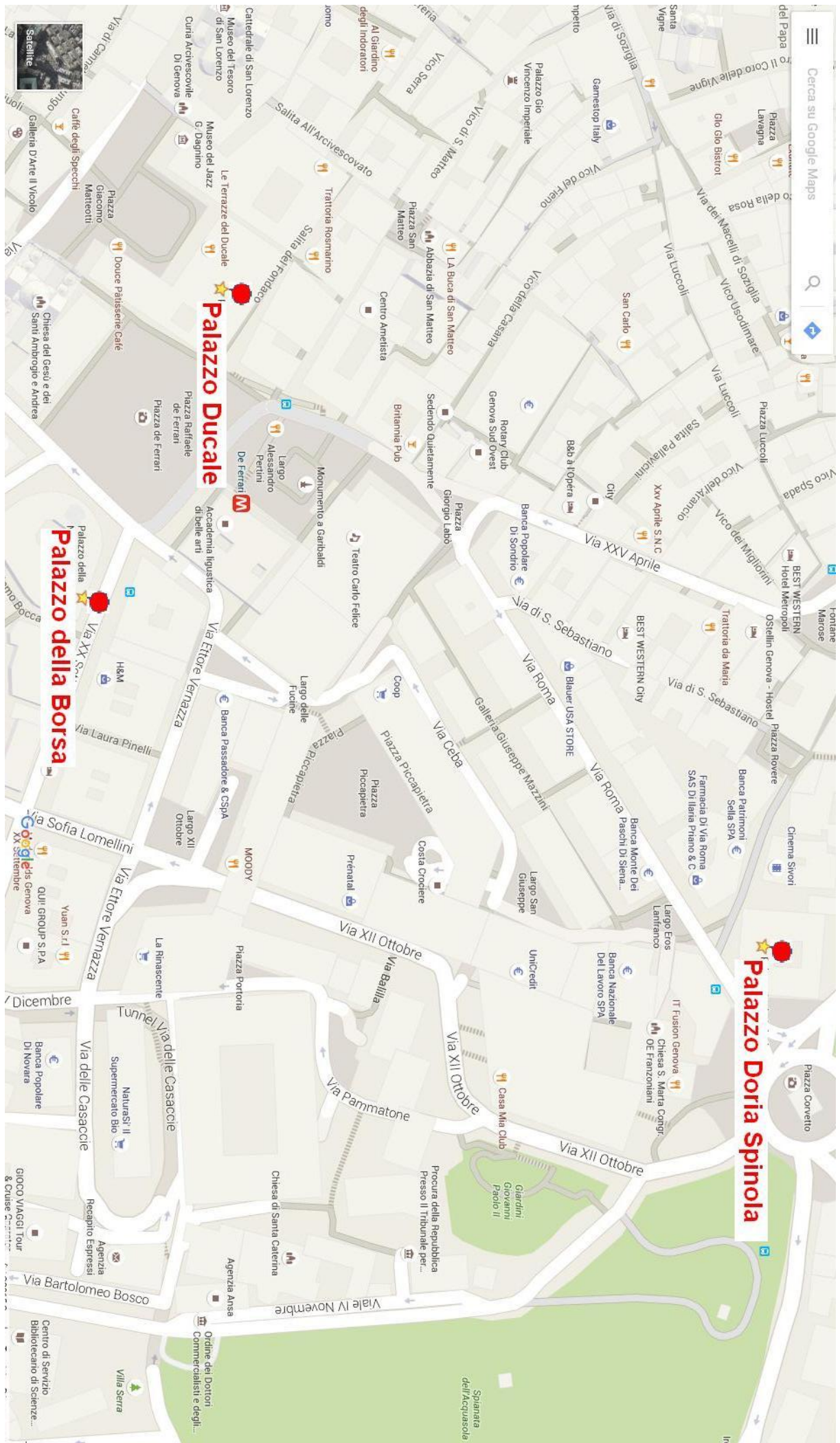
Abstract

The Global Systems Science takes up the challenge of a scientific approach to the process of policy making by providing innovative solutions based on complex systems science, information technology, data analytics and agent-based systems that in a constant dialogue with the policy makers can address questions and problems at the global level. The aims are to monitor, to understand, to model and to manage enormous complex system global systems. The researcher teams working on the projects of the Global Systems Science Cluster funded by the European Commission operate on a worldwide level and the Science Festival offers to the visitors the opportunity to interact with them and appreciate and test tools and solutions that are the result of their research activities in the context of global challenges as the climate change, the sustainable development, the economic and financial crises, the urbanization and the dynamics of techno-social systems.

DEMOS by

- Project CoeGSS (Coordinator Bastian Koller, coegss-project.eu)
- Project DOLFINS (Organizer Igor Mozetic)
- Project INSIGHT (Coordinator Ricardo Herranz, insight-fp7.eu)
- Project MULTIPLEX (Coordinator Guido Caldarelli, multiplexproject.eu)
- Project SIMPOL (Coordinator Stefano Battiston, simpolproject.eu)
- Project SYMPHONY (Coordinator Silvano Cincotti, projectsymphony.eu)
- "Money never Sleeps", Martin Nadal
- "Treading the Steep Route: circuits and flux in the global tea trade", Kat Austen

Cerca su Google Maps



Palazzo Ducale

Palazzo della Borsa

Palazzo Doria Spinola