CSS/ITALY
ITALIAN CHAPTER OF COMPLEX SYSTEMS SOCIETY

Italian Regional Conference on Complex Systems

TRENTO, ITALY
JULY 1-3, 2019

WELCOME TO CSS/ITALY 2019

The First Italian Regional Conference on Complex Systems is the flagship event of CSS/Italy to promote the dissemination of Complexity Science and interdisciplinary scholarly exchange for complex systems researchers and practitioners in Italy.

CCS/Italy 2019 will focus on cutting edge research topics with high societal impact from the perspective of Complexity Science. Special attention is given to facilitating the professional growth of students, postdocs and early-career faculty in the Italian territory.

Manlio De Domenico
General Chair

Sponsored by

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UNIVERSITÀ DEGLI STUDI DI TRENTO
Dipartimento di Matematica

UNIVERSITÀ DEGLI STUDI DI PADOVA

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PROGRAM AT A GLANCE

JULY 1, 2019			
08.30 - 09.00	Hall	Welcome and Registration	
09.00 - 09.45	Sala Stringa	Opening	
09.45 - 10.30	Sala Stringa	Keynote	The learning landscape of neural networks
10.30 - 11.00	Catering area	Coffee break	
11.00 - 11.25	Sala Stringa	Invited	It takes a village - how collaborations in complex systems and data science for social good can make a difference
11.25 - 11.50	Sala Stringa	Invited	Reconstructing transmission chains to investigate spatiotemporal patterns of mosquito-borne infections
11.50 - 12.50	Sala Stringa	Contributed	
12.50 - 14.30	Catering area	Lunch	
14.30 - 15.53	Sala Stringa	Contributed	
15.53 - 16.30	Catering area	Coffee break	
16.30 - 16.55	Sala Stringa	Invited	Ecological interactions in complex landscapes
16.55 - 17.20	Sala Stringa	Contributed	
17.30 - 18.30	North building	Poster Session & beers	
19.30 - 20.30	Via S. Croce 77	Public Lecture	La scienza della complessità per affrontare le sfide del futuro

JULY 2, 2019			
09.00 - 09.45	Sala Stringa	Keynote	From Data to Modelling and back: biodiversity in ecological communities
09.45 - 10.33	Sala Stringa	Contributed	
10.33 - 11.00	Catering area	Coffee break	
11.00 - 11.25	Sala Stringa	Invited	Controlling collective behaviour in complex networks: perspectives, methodologies and applications
11.25 - 11.50	Sala Stringa	Invited	Molecular self-assembly and the Origin of Life
11.50 - 12.50	Sala Stringa	Contributed	
12.50 - 14.30	North building	Lunch	
14.30 - 14.55	Sala Stringa	Invited	Statistical mechanics of weighted heterogeneous random (financial) networks
14.55 - 15.55	Sala Stringa	Contributed	
15.55 -16.24	Sala Stringa	Coffee break	

16.24 - 17.00	Sala Stringa	Contributed	
17.00 - 18.00	North building	Poster session and beers	
20.00 - 22.30	La Cantinota	Social dinner	

JULY 3, 2019			
09.00 - 09.45	Sala Stringa	Keynote	Natural Intelligence: The surprising cognitive capacities of rats, and underlying neuronal substrates
09.45 - 10.10	Sala Stringa	Invited	Complexity in Biomedicine
10.10 - 11.00	Sala Stringa	Contributed	
11.00 - 11.30	Catering area	Coffee break	
11.30 - 12.00	Sala Stringa	Young Scientist Award and Closing remarks	

PROGRAM

8.30
Hall

WELCOME AND REGISTRATION

9.00
Sala Stringa

OPENING
Manlio De Domenico, FBK, National Coordinator CSS/Italy and Chair
Francesco Profumo, President FBK
Guido Caldarelli, IMT Lucca and President CSS

9.45
Sala Stringa

KEYNOTE **THE LEARNING LANDSCAPE OF NEURAL NETWORKS**

Riccardo Zecchina, University Bocconi

10.30
Catering Area
North building

Coffee break

11.00
Sala Stringa

INVITED **IT TAKES A VILLAGE - HOW COLLABORATIONS IN COMPLEX SYSTEMS AND DATA SCIENCE FOR SOCIAL GOOD CAN MAKE A DIFFERENCE**

Daniela Paolotti, ISI Turin

11.25
Sala Stringa

INVITED **RECONSTRUCTING TRANSMISSION CHAINS TO INVESTIGATE SPATIOTEMPORAL PATTERNS OF MOSQUITO-BORNE INFECTIONS**

Giorgio Guzzetta, FBK Trento

11.50
Sala Stringa

CONTRIBUTED

Bayesian framework for inference in epidemic processes on livestock movement networks
Indaco Biazzo, Polytechnic University of Turin

Extracting significant signal of news consumption from social networks: the case of Twitter in the Italian political elections
Fabio Saracco, IMT Lucca

Classification of Genome Wide Association data by Belief Propagation Neural network
Daniele Dall'Olio, University of Bologna

Introducing the Complex Human Interactions in MEdical Records and Atlases Network - CHIMERA
Carlo Mengucci, University of Bologna

Unfolding the innovation system for the development of countries: co-evolution of Science, Technology and Production
Giulio Cimini, IMT Lucca

12.50
Catering Area North building

Lunch

14.30
Sala Stringa

CONTRIBUTED

Analytical approach to network inference: investigating the degree distribution
Gloria Cecchini, University of Florence

Measuring Network Features under Uncertainty
Sebastian Raimondo, FBK Trento

Complex Water Distribution Networks: How topology affects hydraulic systems?
Carlo Giudicianni, University "Luigi Vanvitelli"

Small-world properties of creative semantic networks in low and high fluid intelligence children
Clara Rastelli, University of Trento

Explaining urban mobility from urban features and morphology
Gevorg Yeghikyan, SNS Pisa

Human mobility as nonlinear dynamics driven by stochastic exogenous forcing
Valeria D'Andrea, FBK Trento

Sparse Decision Networks
Antonio Scala, ISC/CNR Rome

15.53
Catering Area

Coffee break

16.30
Sala Stringa

INVITED **ECOLOGICAL INTERACTIONS IN COMPLEX LANDSCAPES**

Enrico Bertuzzo, Ca' Foscari University Venice

16.55
Sala Stringa

CONTRIBUTED

Coupled effects of competition and neutrality in a model ecosystem
Carlos A. Plata, University of Padua

Pattern formation in niche space with two- and three-body interactions
Deepak Gupta, University of Padua

17.30
Open space
North building

POSTER SESSION AND BEERS

19.30
FBK Via Santa Croce 77
Trento

PUBLIC LECTURE **LA SCIENZA DELLA COMPLESSITÀ PER AFFRONTARE LE SFIDE DEL FUTURO**

Guido Caldarelli, IMT Lucca

9.00
Sala Stringa

KEYNOTE **FROM DATA TO MODELLING AND BACK: BIODIVERSITY IN ECOLOGICAL COMMUNITIES**

Amos Maritan, University of Padua

9.45
Sala Stringa

CONTRIBUTED

Ecology of Human Activities
Samuele Stivanello, University of Padua

Macroecological laws across microbial communities
Jacopo Grilli, ICTP Trieste

Variational principle for xylem's tapering in vascular plants
Loren Kocillari, IIT Trento

Evolutionary model of protein domains in bacterial genomes
Claudia Sala, University of Bologna

10.33
Catering Area

Coffee break

11.00
Sala Stringa

INVITED **CONTROLLING COLLECTIVE BEHAVIOUR IN COMPLEX NETWORKS: PERSPECTIVES, METHODOLOGIES AND APPLICATIONS**

Mario Di Bernardo, University of Naples "Federico II"

11.25
Sala Stringa

INVITED **MOLECULAR SELF-ASSEMBLY AND THE ORIGIN OF LIFE**

Tommaso Bellini, University of Milan

11.50
Sala Stringa

CONTRIBUTED

Statistical laws in complex component systems
Matteo Osella, University of Turin

Statistical physics of coordination problems on networks: statics and dynamics
Luca Dall'Asta, Polytechnic University of Turin

Learning (sub-)optimal percolation with network dismantling
Marco Grassia, University of Catania

A Birth-Death-Innovation model for the human regulatory network
Michele Caselle, University of Turin

Pattern invariance for reaction-diffusion systems on complex networks
Giulia Cencetti, University of Florence

12.50
Catering Area North building

Lunch

14.30
Sala Stringa

INVITED **STATISTICAL MECHANICS OF WEIGHTED HETEROGENEOUS RANDOM (FINANCIAL) NETWORKS**

Andrea Gabrielli, ISC/CNR

14.55
Sala Stringa

CONTRIBUTED

Reducing Topological Redundancy Enhances Transport Properties in Interconnected Systems
Arsham Ghavasieh, FBK Trento

A dynamic network model with persistent links and node-specific latent variables, with an application to the interbank market
Piero Mazzarisi, Scuola Normale Superiore, University of Bologna

Stochastic mechanisms of auto-regulation in Escherichia coli with synthetic promoter in response to varying external phosphate levels
Ozan Kahramanogullari, University of Trento

Cascade-based attacks on multilayer networks
Oriol Artime, FBK Trento

15.55
Catering Area

Coffee break

16.24
Sala Stringa

CONTRIBUTED

Statistical and dynamical properties of the bike mobility: The Bella Mossa data set in Bologna
Armando Bazzani, University of Bologna

Network depth: identifying median and contours in complex networks
Giulia Bertagnolli, FBK Trento

Homological connectivity dynamics
Giovanni Petri, ISI Foundation Turin

17.00
Open space
North building

POSTER SESSION AND BEERS

20.00
Ristorante La Cantinota
Via S. Marco, 22
Trento

SOCIAL DINNER

9.00
Sala Stringa

KEYNOTE **NATURAL INTELLIGENCE: THE SURPRISING COGNITIVE CAPACITIES OF RATS, AND UNDERLYING NEURONAL SUBSTRATES**

Mathew Diamond, SISSA Trieste

9.45
Sala Stringa

INVITED **COMPLEXITY IN BIOMEDICINE**

Caterina La Porta, University of Milan

10.10
Sala Stringa

CONTRIBUTED

Exploring the interplay between brain and mind in Alzheimer's disease
Barbara Benigni, FBK Trento

Communicability-based structural connectivity networks for the characterization of Alzheimer's disease
Eufemia Lella, University of Bari

Brain dynamics during induced altered perceptual phenomenology revealed by multiscale permutation entropy and functional connectivity networks
Antonino Greco, University of Trento

Unravelling the topological arrangements and selected reaction parameters from global measurements of an extended neural model
Ihusan Adam, University of Florence

11.00
Catering Area

Coffee break

11.30
Sala Stringa

YOUNG SCIENTIST AWARD AND CLOSING REMARKS

Mattia Frasca, University of Catania and SICC President
Samir Suweis, University of Padua and National Vice-Coordinator CSS/Italy

KEYNOTE AND INVITED SPEAKERS

KEYNOTE ***Riccardo Zecchina*, University Bocconi**

The learning landscape of neural networks

July 1 | 9.45 - 10.30

Deep Neural Networks (DNN) are becoming fundamental learning devices for extracting information from data, in a variety of real-world applications and in natural and social sciences. The learning process in DNN consists in finding a minimizer of a loss function which measures how well the data are classified. This optimization task is typically solved by tuning millions of parameters by stochastic gradient algorithms. This process can be thought of as an exploration process of a highly non convex landscape.
In this talk we present results which show that such landscapes possess very peculiar wide flat minima and that the current ANN models have been shaped to make the loss functions and the algorithms to focus on those minima. We also derive new efficient algorithmic solutions.

INVITED ***Daniela Paolotti*, ISI Turin**

It takes a village - how collaborations in complex systems and data science for social good can make a difference

July 1 | 11.00 - 11.25

The unprecedented opportunities provided by data science and complex systems in all the areas of human knowledge become even more evident when applied to the fields of social innovation, international development and humanitarian aid. Using social media data to study malnutrition and obesity in children in developing countries, using mobile phones digital traces to understand women mobility for safety and security, harvesting search engine queries to study suicide among young people in India: these are only a few of the examples of how data science can be exploited to solve issues around many social problems and support global agencies and policymakers in implementing better and more impactful policies and interventions. Nevertheless, scientists alone cannot be successful in this complex effort. Greater access to data, more collaboration between public and private sector entities, and an increased ability to analyze datasets are needed to tackle these society's greatest challenges. In this talk, we will cover examples of how actors from different entities can join forces around data and knowledge to create public value with an impact on global societal issues and set the path to accelerate the harnessing of data science for social good.

INVITED ***Giorgio Guzzetta*, FBK**

Reconstructing transmission chains to investigate spatiotemporal patterns of mosquito-borne infections

July 1 | 11.25 - 11.50

Understanding the spatiotemporal dynamics of mosquito-borne infections is crucial to design and optimize control interventions. Bayesian inference methods can help in this task by reconstructing likely transmission chains (i.e., who infected whom), using information on the spatial location of cases and their time of symptom onset. We will present applications of such methods to dengue transmission from 2013-2016 in Porto Alegre, a metropolis in subtropical Brazil, and to the largest outbreak of chikungunya ever recorded in Europe to date, occurred in the summer of 2017 in Italy. These analyses provided quantitative information on the relationship between focal transmission (due to mosquito dispersal and walking-distance human movements) and the spread of infections at larger scale mediated by transportation-mediated human mobility (e.g. due to commuting and traveling), highlighting striking similarities between substantially different geographic and epidemiological contexts. Furthermore, we will show how insights obtained from the reconstruction of transmission chains can be applied to assess the effectiveness of public health measures aimed to contain the spread of mosquito-borne diseases.

INVITED ***Enrico Bertuzzo*, University Ca' Foscari Venice**

Ecological interactions in complex landscapes

July 1 | 16.30 -16.55

Biodiversity is controlled by species specific traits and complex ecological interactions, yet universal macroecological patterns often emerge at large scales. Notable examples are the species area relationship and the elevational gradients of species richness. In this presentation, I investigate how the physical structure of the complex landscapes where species interactions take place could lead to emerging large scale patterns regardless of specific processes occurring at the local scale. The presentation focuses in particular on ecological processes occurring on fractal river networks and on the fluvial landscapes they form. First, a brief overview on drivers of biodiversity in river networks is provided. In the second part, the role of the geomorphology of mountains in shaping elevational gradients of species richness is investigated in more details.

KEYNOTE ***Amos Maritan*, University of Padua**

From Data to Modelling and back: biodiversity in ecological communities

July 2 | 9.00 -9.45

Empirical observations show that ecological communities can have a huge number of coexisting species, also with few or limited number of resources. However, standard modeling of population dynamics based on consumer resource or Lotka-Volterra type of equations predicts that ecosystem stability should decrease as the number of species in the community increases and that the number of coexistent species is limited by the number of different type of available resources.
In this talk I will show how cooperation and adaptation are key process to consider when modelling the population dynamics of microbial ecosystems. In the first part of the talk I will introduce adaptive consume resource models where metabolic strategies are dynamics and tend to maximize species' relative fitness. In the second part I will present a stochastic model which includes exploitative interactions as well as cooperative interactions induced by cross-feeding.
Introducing adaptation and cooperation in the theoretical framework naturally leads to a solution of long-standing questions about complexity-stability and competitive exclusion paradox and on how highly biodiverse microbial communities can coexist in presence of only few resources.

INVITED ***Mario Di Bernardo*, University of Naples "Federico II"**

Controlling collective behaviour in complex networks: perspectives, methodologies and applications

July 2 | 11.00 - 11.25

Network systems abound in Nature and play an important role in many technological applications, e.g. power grids, cooperative robotic networks, the internet, synthetic biology. Their complex structure together with the dynamics of the processes taking place on them can yield emergent collective behaviour which cannot be explained in terms of the individual node dynamics alone. A crucial example is the emergence of coordination and synchronization where all nodes in the network converge towards some common asymptotic solution. This talk will address the problem of designing feedback control strategies to engineer the emergence of some desired coordinated collective behaviour in complex networks and obtain appropriate conditions to select the control features in order to guarantee convergence.

In particular, I will focus on recent developments by my group on distributed and decentralized strategies to control the collective behaviour of a network of interest towards synchronization and other types of coordinated behaviour.
I will highlight the role played by the structure of the network, the properties of the network nodes, and the control layers and describe some of the pressing open challenges that need to be faced in order to develop a coherent framework to achieve real-time feedback control of collective behaviour in complex network systems. I will illustrate the theoretical results through some application problems in Engineering and the Life Sciences that we are currently working on.

INVITED ***Tommaso Bellini*, University of Milan**
Molecular self-assembly and the Origin of Life
July 2 | 11.25 - 11.50

The phase diagram of aqueous solutions and mixtures of short and ultrashort oligomers of DNA and RNA is remarkably rich, and includes liquid crystal (LC) phases, gels, liquid-liquid and liquid-LC phase coexistence.
We recently found that a similar phase behavior, which includes LC ordering and phase separations, is also found in solutions of mononucleotides. Remarkably, we observe self-assembly only when the Watson-Crick pairing rule is obeyed, i.e. in solutions containing A-T and C-G combinations. In these conditions, the mononucleotides arrange into columnar stacks of paired bases, a geometry that closely resembles the famed double helical structure. Thus, the Watson-Crick selective base pairing of DNA and RNA chains, at the basis of the storage and transfer of genetic information, follows from a mechanism already active at the level of the selective self-assembly of much simpler molecules.
These, and other recent observations, suggest that DNA and RNA polymers could have emerged from the chemical variety of the early Earth through a combination of equilibrium and non-equilibrium processes, effectively catalyzing the chemical stabilization of their own self-assembled structure.

INVITED ***Andrea Gabrielli*, ISC/CNR**

Statistical mechanics of weighted heterogeneous random (financial) networks

July 2 | 14.30 - 14.55

In the last years the formulation of statistical ensembles of binary and weighted random graphs satisfying some arbitrary constraints has attracted much attention in phys/math communities for its two-fold potential application [1, 2]: (i) The construction of appropriate null models for the statistical validation of high order properties of real networks; (ii) the reconstruction of the statistical properties of real network starting for partial accessible information. The cornerstone of the statistical physics of complex networks is the idea that the links, and not the nodes, are the effective particles of the system. Here we formulate a mapping between weighted networks and lattice gasses, making the conceptual step forward of interpreting weighted links as particles with a generalised coordinate [3]. This leads to the definition of the grand canonical ensemble of weighted complex networks. We derive exact expressions for the partition function and thermodynamic quantities, both in the cases of global and local (i.e., node-specific) constraints on density and mean energy of particles. We further show that, when modeling real cases of networks, the binary and weighted statistics of the ensemble can be disentangled, leading to a simplified framework for a range of practical applications.

KEYNOTE ***Mathew Diamond*, SISSA Trieste**

Natural Intelligence: The surprising cognitive capacities of rats, and underlying neuronal substrates

July 3 | 9.00 - 9.45

While neuroscientists are working assiduously to bring deep learning and other neural networks frameworks into the study of the brain, our argument will be that a flow of knowledge in the other direction will also be useful. The nervous system employs problem solving algorithms that have been tuned through millions of years of natural selection. Some of the perceptual and cognitive mechanisms of brain – what we call natural intelligence – could act as inspiration to purveyors of artificial intelligence. For the natural-to-artificial flow of knowledge to work, we need a deeper understanding of the capacities of humans and animals under controlled conditions. I will illustrate several behavioral paradigms in which rats display good capacities (sometimes approaching those of humans) and will present ongoing studies of the underlying neuronal circuits.

INVITED ***Caterina La Porta*, University of Milan**

Complexity in Biomedicine

July 3 | 9.45 - 10.10

In this talk I will discuss recent advances in understanding phenotypic plasticity of cancer cells, highlighting the role of the epithelial mesenchymal transition for metastasis. To disentangle the complexity of environmentally induced phenotypic transitions, there is a growing need for novel advanced algorithms as those proposed in our recent work combining single cell data analysis and numerical simulations of gene regulatory networks. I will conclude discussing recent developments in artificial intelligence and its applications to personalized cancer treatment.

POSTERS

P1 Metamaterial architecture from a self-shaping carnivorous plant
Caterina Am La Porta, Maria Chiara Lionetti, Silvia Bonfanti, Simone Milan, Cinzia Ferrario, Daniel Rayneau-Kirkhope, Mario Beretta, Maryam Hanifpour, Umberto Fascio, Miriam Ascagni, Larissa De Paola, Zoe Budrikis, Mario Schiavoni, Ermelinda Falletta, Alessandro Caselli, Oleksandr Chepizhko, Ausonio Tuissi, Alberto Vailati and Stefano Zapperi

P2 The effect of demographic noise in MacArthur's resource-consumer model
Stefano Garlaschi, Marco Formentin and Amos Maritan

P3 Informing coarse-graining modelling with graph analytics
Paolo Sylos Labini, Marta Rigoli, Marco Giulini, Roberto Menichetti, Raffaello Potestio and Flavio Vella

P4 Deriving footprints of evolution by the ecological modeling of Long Interspersed Element in mammals.
Silvia Vitali, Claudia Sala and Gastone Castellani

P5 Classifying disinformation vs mainstream news via network comparison
Francesco Pierri, Carlo Piccardi and Stefano Ceri

P6 Estimating species richness and macro-patterns from local presence-absence data
Anna Tovo, Marco Formentin and Samir Suweis

P7 Maximum entropy null models for thresholded undirected weighted networks
Carlo Nicolini, Giulia Forcellini and Angelo Bifone

P8 Variable aggregation and (broadcasting) networks.
Mauro Faccin, Michael Schaub and Jean-Charles Delvenne

P9 Trip Centrality: walking on a temporal multiplex with non-instantaneous link travel time
Silvia Zaoli, Piero Mazzarisi and Fabrizio Lillo

P10 Percolation analysis of the bus-train-bike aggregate network in Bari
Loredana Bellantuono, Nicola Amoroso, Alfonso Monaco, Sabina Tangaro, Tommaso Maggipinto and Roberto Bellotti

Presenting authors are underlined

P11 Trends in urban flows: from Wi-Fi data to pedestrians' route choices
Roberto Murcio, Balamurugan Soundararaj and Karlo Lugomer

P12 Controllability of Complex Brain Networks
Federica Lorenzi and Samir Suweis

P13 Colombian Export Capabilities: Building the Firms-Products Network
Matteo Bruno, Fabio Saracco, Tiziano Squartini and Marco Duenas

P14 A Study on the Relationship between Science Technology Innovation Capacity and Quality of Life
Taeseok Yong

P15 Novel information theory tools for the prediction of financial stock market crises
Tomas Scagliarini and Sebastiano Stramaglia

P16 Collision of exceptional events leads to interlacing collective phenomena in online social systems
Giuseppe Lupo and Manlio De Domenico.

P17 Scaling and renormalization group for the activity of neurons
Giorgio Nicoletti, Amos Maritan and Samir Suweis

P18 Stochastic circadian quasi-cycles in cyanobacteria
Valentina Buonfiglio, Duccio Fanelli, Francesca Di Patti, Rinat Arbel-Goren, Joel Stavans

P19 Temporal network embedding for the estimation of spreading process outcome
Maddalena Torricelli, Márton Karsai and Laetitia Gauvin

P20 A deep learning approach to the structural analysis of proteins
Marco Giulini and Raffaello Potestio

P21 The dynamics of natural selection in dispersal-structured populations
David Navidad Maeso, Marco Patriarca and Heinsalu Els

Presenting authors are underlined

VENUE

The Conference will be held at Fondazione Bruno Kessler (Povo, Trento).

Top Research Institute in Italy, ranked at the 1st place for scientific excellence within 3 different subject areas (ICT, History and Sociology) and for the economic and social impact according to the quality of research ANVUR evaluation for the period 2010-2014.

Fondazione Bruno Kessler is a research non-profit public interest entity.

Being the result of a history that is more than half a century old, through 2 scientific hubs, 7 research centres, 410 researchers, 2 specialized libraries, 7 laboratories, FBK aims to results of excellence in science and technology with particular emphasis on interdisciplinary approaches and to the applicative dimension.

We achieve this thanks to our constant attention to collaborations and exchange activities with research organizations, both institutional and corporate, national and international, which extend our innovation capability and involve the community and the local economy in the circulation of knowledge and technologies.

Via Sommarive 18
38123 Trento
+39 0461 314 444

HOW TO REACH FBK - POVO

CAR

From A22 motorway to FBK-Povo: exit the motorway at TRENTO SUD and follow the instruction at this link. FBK is the building inside the blue fence.

TAXI

Cabs are available outside the train station or calling (+39) 0461 930002. It costs arount 10-15 Euros from downtown Trento to Povo.

BUS

The town has an efficient urban travel system (orange buses). Please be aware that tickets must be purchased before getting on board at newsagents' or at the train station and must be clocked-in after getting on the bus (price 1,20 €).

- **Bus n.5** (recommended) stops at POVO Facoltà di Scienze
- **Bus n.5/** stops in front of FBK (POVO SOMMARIVE)
- **Bus n.13** stops at Povo Piazza Manci or Povo Centro Civico

SOCIAL DINNER

LA CANTINOTA

Located in the historic centre, La Cantinota restaurant offers different plates of the Trento tradition.

July 2, 2019
20.00

Via S. Marco, 22
38122 Trento TN

ABOUT TRENTO

The Italian town of Trento (110,000 inhabitants), in Northern Italy, was recently voted the town with the highest quality of life in Italy. The charming town center and the natural beauty of the surrounding Alps can be reached quickly by even the hardest-working conference attendee.

Known as the "painted city", Trento offers many beautiful buildings within its compact historical center. Some of these were built to accommodate delegates to the Council of Trent (1545–1563).

Most of the historical center has little or no traffic. Even brief walks during breaks from the conference are enjoyable. Culinary delights ranging from a cone of Italian ice cream to a multicourse meal can be enjoyed indoors or outdoors.

For further information about attractions in Trento and Environs, visit
www.discovertrento.it/

YOUNG SCIENTIST AWARD

Complexity is proud to sponsor the Young Scientist Award, and to support emerging researchers in the field of Complex Systems.

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UNIVERSITÀ DEGLI STUDI DI TRENTO
Dipartimento di Matematica

UNIVERSITÀ DEGLI STUDI DI PADOVA