



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE
TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE
AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES



INTERNATIONAL SCHOOL OF COMPLEXITY

17th Course: *STOCHASTIC FORECASTING IN COMPLEX SYSTEMS*

ERICE-SICILY: 25 – 31 AUGUST 2022

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

Random Matrix Theory applied to Complex Systems

• J.-P. BOUCHAUD, CFM & Econophysics Chair, Ecole Polytechnique, Paris, FR

Collective dynamical regimes in neural networks

• R. BURIONI, University of Parma, IT

Investor behavior and timescales

• D. CHALLET, University Paris-Saclay, FR

Multiscaling in Econophysics

• T. DI MATTEO, King's College London, UK

Statistical seismicity models

• S. HAINZL, GFZ Potsdam, DE

Abrupt epidemic spreading

• H. HERRMANN, ESPCI, Paris, FR

Mechanical models for earthquake occurrence

• E. LIPPIELLO, Campania University, Caserta, IT

High-order interactions in neuroscience and behavioral sciences

• D. MARINAZZO, Ghent University, BE

Seismic hazard and earthquake forecasting

• W. MARZOCCHI, University of Naples Federico II, IT

Critical brain dynamics: theory and applications

• O. SHRIKI, Ben Gurion University, Be'er Sheva, IL

Complex systems forecasting

• S. THURNER, University of Wien and CSH Vienna, AU

Nonadditive entropies and statistical mechanics of complex systems

• C. TSALLIS, CBPF, Rio de Janeiro, BR and Santa Fe' Institute, NM, US

PURPOSE OF THE COURSE

This Course aims to cover the most recent analytical, experimental, observational and computational aspects about stochastic forecasting in complex systems.

Topics include, but are not limited to:

Brain Dynamics;
Earthquake dynamics;
Financial markets dynamics;
Complex networks;
Self-Organized criticality;
Agent-based models applied to complex socio-economical systems;
Epidemic models;
Probabilistic prediction and scenario evaluation;
Statistical mechanics of complex systems.

APPLICATIONS

Persons wishing to attend the Course are requested to write to:

Professor Andrea Rapisarda
University of Catania and INFN, Catania, Italy
CSH, Vienna, Austria
E-mail: stofocs.eric2022@gmail.com

• PLEASE NOTE

Participants must arrive in Erice no later than 12 a.m. on 25th August 2022.

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: «*After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elymi: their towns were Segesta and Erice.*»

This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchises, by his son Aeneas, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour's drive from Erice.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following address:
<http://www.ccsem.infn.it>

A. ZICHICHI
DIRECTOR OF THE SCHOOL

G. BENEDEK – A. RAPISARDA – C. TSALLIS
CO-DIRECTORS OF THE SCHOOL

L. DE ARCANGELIS – R.N. MANTEGNA – A. RAPISARDA
DIRECTORS OF THE COURSE

A. ZICHICHI
EMFSC PRESIDENT