



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



INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS

58th Workshop CARBON TOPOLOGY

ERICE-SICILY: 18 – 22 JUNE 2013

Sponsored by the: • Italian Ministry of Education, University and Scientific Research
• Sicilian Regional Government • Fondo A. & G. Biavati

TOPICS AND LECTURERS

Mathematical chemistry & fullerene topology
The time of carbon Schwarzites
Dopants "Ripples Puddles" vs "Striped Puddles"
Elastic properties of graphene from phonons
Reactivity of carbon structures: local versus topological effects
Unsolved problems in fullerene topology
Mechanical properties of graphene
The physics of topological indicators
Novel carbon nanostructures
More on Zagreb Indices of Graph Products
Molecular dynamics simulations of carbon nanostructures
Fullerene Sphericity
Aromaticity, anti-aromaticity & more
Combining graph theory & ab initio molecular dynamics
Graphene vibrational spectroscopy
Coloring topology by chemical reactivity

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• L. COLOMBO, University of Cagliari, IT
• M. DE CORATO, University of Modena, IT
• M. DIUDEA, University of Cluj, Cluj-Napoca, RO
• A. IRANRAMESH, University of Tehran, IR
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• A. PAPAGNI, University of Milano-Bicocca, IT
• F. PIETRUCCHI, EPFL, Lausanne, CH
• A. POLITANO, University of Calabria, Rende, IT
• M. PUTZ, University of Timisoara, RO

PURPOSE OF THE WORKSHOP

Many relevant physical and chemical properties of carbon nanostructures like graphene, fullerenes, nanotubes, sp^2 -bonded schwarzites, as well as sp -bonded carbiners and sp^3 -bonded clathrates can be predicted or accounted for on the basis of pure topology. Several topological indicators derived from differential geometry or the mathematical theory of graphs have been recently recognized to provide alone important information for sp^2 carbon systems, ranging, e.g., from the hierarchy of isomer stability to site reactivity and functionalization. The subject is largely cross-disciplinary, closely involving physics, organic chemistry and applied mathematics. The present workshop will gather a few eminent specialists in these three areas of carbon topology with the aim of establishing a common language and pursue new joint projects in this important field. The workshop is dedicated to the memory of Prof. Ante Graovac, who has made fundamental contributions and triggered innumerable productive initiatives in the field.

APPLICATIONS

Persons wishing to attend this Workshop should apply via e-mail to:

- Professor Giorgio BENEDEK
Dipartimento di Scienza dei Materiali - Università di Milano-Bicocca
20125 Milano, Italy
or DIPC, 20018 San Sebastian, Spain
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This application should include:

i) date and place of birth, as well as current nationality; ii) current position and affiliation; iii) academic degrees; iv) list of publications.

- PLEASE NOTE
Participants should arrive in Erice on 18 June not later than 7 pm.

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>