



GALILEO GALILEI FOUNDATION
WORLD FEDERATION OF SCIENTISTS
ETTORE MAJORANA CENTRE FOR SCIENTIFIC CULTURE

GALILEO GALILEI CELEBRATIONS

Four Hundred Years Since the Birth of Modern Science

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

33rd Course: VACUUM AND VACUA: THE PHYSICS OF NOTHING

ERICE-SICILY: 2 - 10 JULY 1995

Sponsored by the: • Academies of Sciences of Estonia, Georgia, Lithuania, Russia and Ukraine •
• Chinese Academy of Sciences • Commission of the European Communities • European Physical Society •
• Italian Ministry of Education • Italian Ministry of University and Scientific Research • Sicilian Regional Government •
• Weizmann Institute of Science • World Laboratory

PROGRAMME AND LECTURERS

OPENING LECTURE

Bound States of Massless Objects: Source of New Physics

• V.N. GRIBOV, Landau Institute, Moscow, Russia

THEORY AND PHENOMENOLOGY

Classical versus Quantum Vacua: from Mechanics to Superstrings

• G. VENEZIANO, CERN, Geneva, Switzerland

False Vacuum Decay

• M. VOLOSHIN, Univ. of Minnesota & ITEP, Moscow, Russia

Properties of the Vacuum in String Theory

• D.V. NANOPOULOS, Texas A&M Univ., College Station, USA

QCD Vacuum and Experiments: Masses, Lifetimes, Magnetic

Moments of Hadrons Including Glueballs

• M.A. SHIFMAN, University of Minnesota, Minneapolis, MN, USA

Understanding Non-perturbative Phenomena in SuperSymmetric Gauge

Theories: Confinement, θ Angles, and SuperSymmetry Breaking

• S. FERRARA, CERN, Geneva, Switzerland

Renormalons and Phenomenological Consequences

• G. ALTARELLI, CERN, Geneva, Switzerland

Signals of Flavour Physics in SuperSymmetric Unification

• R. BARBIERI, University of Pisa, Italy

PHYSICS RESULTS: STATUS AND PERSPECTIVES

The Standard Model

• J. ELLIS, CERN, Geneva, Switzerland

LEP

• H.B. NEWMAN, Caltech, Pasadena, CA, USA

HERA

• G. WOLF, DESY, Hamburg, Germany

FERMILAB

• J. PEOPLES, Fermilab, Batavia, IL, USA

Neutron Electric Dipole, Strong CP Problem and Axions

• N.F. RAMSEY, Harvard University, Cambridge, MA, USA

SuperSymmetry at LEP-II

• A. ZICHICHI, CERN, Geneva, CH, INFN & Univ. of Bologna, Italy

CLOSING LECTURE

• L.B. OKUN, ITEP, Moscow, Russia

Invited Scientists: • I. AZIMOV, Theory Department, St. Petersburg Nuclear Physics Institute, Gatchina, Russia • M. GOURDIN, Laboratoire de Physique Théorique et Hautes Energies, Université Pierre et Marie Curie, Paris, France • P.W. HIGGS, Department of Physics, University of Edinburgh, UK • V. KHOZE, Department of Physics, University of Durham, UK

PURPOSE OF THE SCHOOL

If you know the exact properties of the vacuum you can predict everything. The purpose of this year's School is to review and discuss our present understanding of "Nothing". Awaiting for being able to predict everything, the main results from LEP, HERA and FERMILAB will be presented. New projects will also be discussed as well as the present status of Higgs Phenomenology and the Search for SuperSymmetry in the major laboratories.

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 great historian Thucydides (~500 B.C.) said that the Elymi - founders of Erice - were survivors of the destruction of Troy. Ancient historians agreed that Erice was the oldest city in Europe.

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. In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is 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 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.

APPLICATIONS

Interested candidates should send a letter to the Director of the School:

Professor Antonino ZICHICHI
CERN
CH-1211 GENEVA 23, Switzerland

specifying:

- date of birth and present activity;
- nationality.

Please enclose a letter of recommendation from the group leader or the Director of the Institute or from a senior physicist.

SCHOLARSHIPS

The following scholarships have been established in honour of, and named after, the late physicists:

JOHN S. BELL	ROBERT HOFSTADTER	ISIDOR I. RABI
PATRICK M.S. BLACKETT	GUNNAR KÄLLEN	GIULIO RACAH
JAMES CHADWICK	ANDRÉ LAGARRIGUE	BRUNO ROSSI
AMOS DE-SHALIT	GIUSEPPE P.S. OCCHIALINI	ANDREI D. SAKHAROV
PAUL A.M. DIRAC	BRUNO PONTECORVO	JUN J. SAKURAI

The scholarships cover registration fees and full board and lodging in Erice. In order to allow a more direct judgement of all applicants these scholarships will be awarded at the end of the Course by a Committee composed of the Lecturers and the Invited Scientists.

● PLEASE NOTE

Participants must arrive in Erice on July 2, not later than 5 p.m.