



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

34th Course: EFFECTIVE THEORIES AND FUNDAMENTAL INTERACTIONS

ERICE-SICILY: 3 - 12 JULY 1996

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

An Effective Description of the QCD Vacuum
• T.D. LEE, Columbia University, New York, NY, USA

THEORY AND PHENOMENOLOGY

Quark Confinement
• V.N. GRIBOV, Central Research Inst. for Physics, Budapest, H

Light-quark Effective Theory
• H. LEUTWYLER, University of Bern, CH

Heavy-quark Effective Theory
• M. NEUBERT, CERN, Geneva, CH

Electroweak Theory Confronting Precision Data
• D. SCHILDKNECHT, University of Bielefeld, D

Effective Descriptions of Physics Beyond the Standard Model
• R. BARBIERI, University of Pisa, I

Effective Actions and Confinement in Supersymmetric Theories
• N. SEIBERG, Rutgers University, Piscataway, NJ, USA

Cosmological Vacua from the Effective String Theory
• G. VENEZIANO, CERN, Geneva, CH

Ten to Eleven: It is not Too Late
• M.J. DUFF, Texas A&M University, College Station, TX, USA

Finite-temperature Effective Theories
• M. SHAPOSHNIKOV, CERN, Geneva, CH

The Unification of the Large and the Small
• S.L. GLASHOW, Harvard University, Cambridge, MA, USA

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 • D.V. NANOPOULOS, Department of Physics, Texas A&M University, College Station, TX, USA • P. NATH, Department of Physics, Northeastern University, Boston, MA, USA • M. ROOS, Department of High Energy Physics, University of Helsinki, Finland

SPECIALIZED SEMINAR

Exploring the Universe with Atomic Clocks
• N.F. RAMSEY, Harvard University, Cambridge, MA, USA

PHYSICS RESULTS: STATUS AND PERSPECTIVES

LEP
• M. POHL, ETH, Zurich, Switzerland

HERA
• G. WOLF, DESY, Hamburg, D

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

Leading Physics at LHC
• A. ZICHICHI, CERN, Geneva, CH, University & INFN, Bologna, I

Isidor Isaac Rabi Dedication Ceremony
T.D. LEE and N.F. RAMSEY

SPECIAL SESSIONS FOR NEW TALENTS

CLOSING LECTURE

• M. GELL-MANN, Santa Fe Institute, Santa Fe, NM, USA

PURPOSE OF THE SCHOOL

Purpose of the School is to discuss the role of effective theories in our present understanding of the Fundamental Interactions. As usual a review of the most interesting experimental results will be the other component of the School. This year a series of special sessions will be devoted to young talents: those fellows who cannot be easily identified in the constantly increasing dimensions of experimental groups. Without excluding theoretical talents we would like to focus our attention on young experimental fellows. The competition is open but needs a strong recommendation from a senior physicist.

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 (~80 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 Aegean 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 Comino, 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:

- i) date of birth and present activity;
- ii) 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 KALLEN	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 3, not later than 5 p.m.

More information about this School and the other activities of the Ettore Majorana Centre can be found on the WWW at the following address:
<http://www.ecsm.infn.it>

G. VENEZIANO AND A. ZICHICHI
DIRECTORS OF THE COURSE

A. ZICHICHI
DIRECTOR OF THE CENTRE