



**GALILEO GALILEI FOUNDATION  
WORLD FEDERATION OF SCIENTISTS  
ETTORE MAJORANA CENTRE FOR SCIENTIFIC CULTURE  
INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS**

**GALILEO GALILEI CELEBRATIONS**

***Four Hundred Years Since the Birth of  
MODERN SCIENCE***

**INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS**

***30th Course: FROM SUPERSTRINGS TO THE REAL SUPERWORLD***

**ERICE-SICILY: 14 - 22 JULY 1992**

*In collaboration with the World Laboratory  
and under the auspices of the Presidency of the Council of Ministers of Italy*

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

**PROGRAMME AND LECTURERS**

**OPENING LECTURE**

*Where We Stand With the Real Superworld*

• A. ZICHICHI, CERN, Geneva, Switzerland

**THEORY AND PHENOMENOLOGY**

*Electroweak Aspects of the Standard Model*

• J. ELLIS, CERN, Geneva, Switzerland

*Phenomenological Supersymmetry (the SUSY Higgs Sector)*

• F. ZWIRNER, CERN, Geneva, Switzerland

*Supergravity as the Infrared Limit of Superstrings*

• S. FERRARA, CERN, Geneva, Switzerland

*Can Supersymmetry be Tested at Acceptable Energies?*

• G.G. ROSS, University of Oxford, UK

*QCD as Part of TOE*

• W.J. STIRLING, University of Durham, UK

*QCD Confronts Experiments*

• G. ALTARELLI, CERN, Geneva, Switzerland

*New Phenomena Below the Mega-TeV Range*

• R. PECCEI, University of California, Los Angeles, CA, USA

**REVIEW LECTURES**

*LEP Physics*

• S.C.C. TING, CERN, Geneva, CH and MIT, Cambridge, MA, USA

*Results from FNAL*

• E. FISK, FNAL, Batavia, IL, USA

*Why the Proton is Getting Bigger*

• J. OREAR, Cornell University, Ithaca, NY, USA

*First Results from HERA*

• B. WIK, DESY, Hamburg, Germany

*Where is Top?*

• R.H. DALITZ, University of Oxford, UK

*Neutrino Masses: Where We Are*

• D.R.O. MORRISON, CERN, Geneva, Switzerland

*Mass Predictions for Complex Quark States and Other Systems*

• A. MARTIN, CERN, Geneva, Switzerland

*Simulations at 16, 40 and 200 TeV*

• L. CIFARELLI, University of Pisa, Italy

**THE GLORIOUS DAYS OF PHYSICS**

*My Life*

• J.A. WHEELER, Princeton University, NJ, USA

**CLOSING LECTURE**

*Is There Life Beyond the Standard Model?*

• S.L. GLASHOW, Harvard University, Cambridge, MA, USA

**PURPOSE OF THE SCHOOL**

This year the «Erice-School» takes place for the 30th time. Following our tradition the choice is as hot as possible: i.e. to understand the origin of mass and to find out where the SUSY threshold can be. In this respect it should be recalled that Supersymmetry has given rise to Supergravity and this has produced Superstring theory, which has an infrared solution no-scale Supergravity. Thus the Supersymmetry breaking can be produced dynamically, via «radiative effects». At this point the link with Electroweak breaking appears natural, if we want to avoid that the Physics at Energies near the Fermi scale is destabilized by the Planck energy scale. In addition to these theoretical speculations the experimental data, if taken with a grain of salt and without breaking the standard wisdom (taking world averages and not a single measurement, using at least two and not only one standard deviation) show consistency with the possibility for the Superworld being around the corner. As far as the origin of mass is concerned, the «classical» approach remains the search for «Higgs». Finally - as usual - a review of the present status in Subnuclear Physics will be presented, in order not to forget where we are.

**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 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). In 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 Corrinno, and a wild and rocky coast around Monte Cofano are at less than one hour drive from Erice.

**PARTICIPATION  
By Invitation**

**SCHOLARSHIPS**

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

JOHN S. BELL  
PATRICK M.S. BLACKETT  
JAMES CHADWICK  
ANOS DE-SHALIT

PAUL A.M. DIRAC  
ROBERT HOFSTADTER  
GUNNAR KALLÉN  
ANDRE LAGARRIGUE

ISIDOR I. RABI  
GIULIO RACAH  
ANDREI D. SAKHAROV  
JUN J. SAKURAI

The scholarships cover registration fees and full board and lodging in Erice. They will be awarded in consultation with the Board of Lecturers at the end of the Course, in order to allow a more direct judgement of all the applicants.

**PLEASE NOTE**

Participants must arrive in Erice on July 14, not later than 5 p.m.

A. ZICHICHI - DIRECTOR