

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

ERICE - TRAPANI - SICILY: 14 - 31 JULY 1974

**Sponsored by: The Italian Ministry of Public Education
The Italian Ministry of Scientific and Technological Research
The North Atlantic Treaty Organization - Alliance for Peace
The Regional Sicilian Government
The Weizmann Institute of Science**

12th Course on: LEPTON AND HADRON STRUCTURE

LECTURERS AND PROGRAMME

OPENING LECTURE

« *Lepton Number as the Fourth Colour: a Unified Gauge Theory of Hadrons and Leptons* ».
A. SALAM, ICTP, Trieste, Italy and Imperial College, London, U.K.

THEORETICAL LECTURES

« *Models of Hadronic Interactions* ».
F. E. LOW, MIT, Cambridge, Mass., U.S.A.
« *Relativistic Quark Models* ».
G. MORPURGO, University of Genoa, Italy.
« *A Possible Way to look at Hadrons: The Massive Quark Model* ».
G. PREPARATA, University of Rome, Italy.
« *Abnormal Nuclear States and Vacuum Excitations* ».
T. D. LEE, Columbia University, New York, U.S.A.
« *Diffraction Excitation and Large Momentum Transfer Phenomena* ».
M. JACOB, CERN, Geneva, Switzerland.
« *Is Theoretical Physics able to explain (e^-e^+) Annihilation into Hadrons?* ».
C. LLEWELLYN-SMITH, CERN, Geneva, Switzerland.
« *Gauge Theories and Deep Inelastic Phenomena* ».
M. GOURDIN, Laboratoire de Physique Théorique, University of Paris VI, France.
« *What are the Hadrons made of?* ».
V. F. WEISSKOPF, MIT, Cambridge, Mass. U.S.A.

SEMINARS ON SPECIALIZED TOPICS

« *(e^+e^-) Physics at Frascati* ».
G. SALVINI, University of Rome, Italy.
« *(e^+e^-) Physics at CEA* ».
R. WILSON, CEA, Cambridge, Mass., U.S.A.
« *(e^+e^-) Physics at SLAC* ».
B. RICHTER, SLAC, Stanford, Calif., U.S.A.
« *An Experiment on Multiple γ -rays Production at the ISR* ».
E. AMALDI, University of Rome, Italy.
« *Hadron Production in Lepton-Nucleon Scattering* ».
C. A. HEUSCH, University of California, Santa Cruz, Calif., U.S.A.
« *The Muon's $(g-2)$* ».
E. PICASSO, CERN, Geneva, Switzerland.
« *Spin Rotation: a Way to detect Neutral Currents, the Neutrino Sea, etc.* ».
L. STODOLSKY, Max-Planck-Institut, München, Germany.
« *Experimental programme for SPS* ».
J. ALLABY, CERN, Geneva, Switzerland

ROUND TABLE DISCUSSIONS

« *Electron-Positron Physics in Europe* ».
Chairman: V. F. WEISSKOPF, MIT, Cambridge, Mass., U.S.A.
« *The Value of Freedom in Science and Daily Life* ».
Chairman: I. I. RAB, Columbia University, New York, U.S.A.

REVIEW LECTURES

« *Neutrino Interactions* ».
E. H. S. BURHOP, University College, London, U.K.
« *Weak Neutral Currents* ».
W. JENTSCHKE, CERN, Geneva, Switzerland.
« *CP Violation and K_2K_s Phenomenology* ».
J. STEINBERGER, CERN, Geneva, Switzerland.
« *CP Violation and Spontaneous Symmetry Breaking* ».
T. D. LEE, Columbia University, New York, N.Y., U.S.A.
« *Is Vector Meson Dominance still alive?* ».
D. SCHILDKNECHT, DESY, Hamburg, Germany.
« *New Vector Mesons?* ».
A. ZICHICHI, CERN, Geneva, Switzerland.
« *Deep Inelastic Processes from a Non-orthodox Point of View* ».
M. GRECO, Laboratori Nazionali del CNEN, Frascati, Italy.
« *High Energy Hadronic Collisions* ».
G. BELLETTINI, University of Pisa, Italy.
« *$K_2^0 P$ Interactions as a Probe for $S=\pm 1$ Baryon States* ».
G. ALEXANDER, Tel-Aviv University, Tel-Aviv, Israel.
« *High Energy Hadrons in Nuclei* ».
R. GLAUBER, Harvard University, Cambridge, Mass., U.S.A.
« *The Missing Particles* ».
R. K. ADAIR, Yale University, New Haven, Conn., U.S.A.

HIGHLIGHTS IN OTHER FIELDS

« *Short Range Correlations in Nuclear Matter* ».
O. KOFOED-HANSEN, CERN, Geneva, Switzerland.
« *Models for the Acquisition of Animal Memory* ».
L. COOPER, Brown University, Providence, R.I., U.S.A.
« *Black Holes* ».
R. RUFFINI, Princeton University, Princeton, N. J., U.S.A.
« *Problems and Perspectives in Solar Energy Conversions* ».
V. SILVESTRI, University of Naples, Italy.

CLOSING LECTURE

« *Fifty Years of Quantum Field Theory* ».
F. E. LOW, MIT, Cambridge, Mass., U.S.A.

THE FUTURE OF HIGH ENERGY PHYSICS

« *Status of the European Project* ».
J. B. ADAMS, CERN, Geneva, Switzerland.
« *The next U.S.A. Super Accelerator* ».
R. R. WILSON, NAL, Batavia, Ill., U.S.A.

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THE GLORIOUS DAYS OF PHYSICS

« *My Life as a Physicist* ».
R. E. PEIERLS, University of Oxford, U.K.

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PURPOSE OF THE SCHOOL

The school is devoted to those physicists who are interested in gaining a much deeper theoretical understanding of the field of physics in which they are working. The programme will emphasize the elucidation and discussion of the progress during the last year. Students will be selected from the applicants according to their scientific qualifications. In this selection, the geographical distribution of the students will be taken into account.
To take full advantage of the material presented at the school, three lectures will be given in the morning and at least two hours of the afternoon will be dedicated to clearing up in free, informal discussions, the topics of the morning lectures. Seminars will be held in afternoon or evening sessions.

ERICE

According to a legend, Erice, son of Venus, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago.
Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Horace (~70 B.C.), Virgil (~20 B.C.), and others, have celebrated this magnificent spot in Sicily in their Poems. Among the beauties there, the Castle of Venus and the Cyclopean Walls can be admired. Other masterpieces of ancient Greek civilization, such as Motya, Segesta and Selinunte, are to be found in the neighbourhood. On the Aegadian Islands, which can be reached by cable car plus hydrofoil boat in about two hours, there are prehistoric murals in the famous grotto of Levanzo, the Grotte Marine of Marettimo, and the recently discovered paleolithic grottoes of Favignana. There are splendid beaches, the farthest about 40 minutes' drive from Erice, at San Vito Lo Capo, Scopello, Cornino, and wild beaches around Monte Cofano.

Please note:

- It is regretted that, owing to the limited number of places available in the lecture hall, it will not be possible to allow any person, not selected by the Committee of the School, to follow the courses.
- NSF travel grants are restricted to U.S.A. citizens. Applications for these should be made as soon as possible through the Director of the School.

GENERAL INFORMATION

Persons wishing to attend the Course should write to the Secretary of the School:

- Miss MARIA ZAINI - International School of Subnuclear Physics via Imerio, 46 - 40126 BOLOGNA, Italy.

They should specify:

- date and place of birth together with their present nationality;
- degree and other academic qualifications;
- list of publications;
- present position and place of work;

and include:

- a letter of recommendation from their research group leader or from a professor of physics.

The subscription fee is 1,000 Swiss francs. Thanks to the generosity of the sponsoring Institutions, partial support can be given to some deserving students, who need financial help. This must be specified and justified in the application letter.

— SPECIAL SCHOLARSHIPS —

Four special Scholarships have been established in honour of and named after the late Physicists

AMOS DE-SHALIT GUNNAR KALLÉN PETER PREISWERTK GIULIO RACAH

These Scholarships cover travel expenses, registration fees, and full board and lodging in Erice.

Scholarships as well as any other form of financial support will be attributed 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.

Closing date for application: June 5, 1974

No special application-form is required

A letter will be sent to successful applicants by June 15. Students experiencing difficulties with travel documentation and needing to know before June 15 whether or not their applications have been accepted, may obtain an earlier special decision by submitting a justified request.

Admission to the School will be decided by a committee consisting of Professors: G. Bernardini, N. Cabibbo, R. H. Dalitz, M. Geil-Mann, T. D. Lee, A. Martin, L. A. Radiati, V. F. Weisskopf and A. Zichichi.

Students must be in Erice on July 14 not later than 5 p.m. Please note that the Calendar Holidays and the School Holidays are totally uncorrelated. More detailed information, including the timetable of the lectures, will be sent to successful applicants together with the letter of acceptance.

A. ZICHICHI - DIRECTOR