

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

ERICE - TRAPANI - SICILY: 8 - 26 JULY 1971

**Sponsored by: ERS - Regional Sicilian Government
MPI - Italian Ministry of Public Education
MRST - Italian Ministry of Scientific and Technological Research
NATO - North Atlantic Treaty Organization
The Weizmann Institute of Science**

Subject: PROPERTIES OF THE FUNDAMENTAL INTERACTIONS

LECTURERS AND PROGRAMME

OPENING LECTURE

« *Quark or Bootstrap: Triumph or Frustration for Hadron Physics?* ».
G. F. CHEW, Lawrence Radiation Laboratory, Berkeley, Calif., U.S.A.

THEORETICAL LECTURES

« *Analytic Properties of the Fundamental Interactions* ».
G. F. CHEW, Lawrence Radiation Laboratory, Berkeley, Calif., U.S.A.
« *Algebraic Properties of the Fundamental Interactions* ».
V. DE ALFARO, University of Turin, Turin, Italy.
« *Quark Models - Developments and Status* ».
R. H. DALITZ, University of Oxford, Oxford, Great Britain.
« *Strong Interaction Dynamics* ».
M. JACOB, CERN, Geneva, Switzerland.
« *Rigorous Results on $(\pi\pi)$ Scattering* ».
A. MARTIN, CERN, Geneva, Switzerland.
« *Dynamical Models Based on Vector Meson Dominance and Universality* ».
J. J. SAKURAI, University of California, Los Angeles, Calif., U.S.A.
« *Complex Regge Poles* ».
F. ZACHARIASEN, California Institute of Technology, Pasadena, Calif., U.S.A.

REVIEW LECTURES

« *Gravitational Interactions* ».
J. WEBER, The Institute for Advanced Study, Princeton, N. J., U.S.A.
« *Weak Interactions* ».
S. B. TREIMAN, Princeton University, Princeton, N. J., U.S.A.
« *Electromagnetic Production of Hadrons* ».
G. MORPURGO, University of Genoa, Genoa, Italy.
« *Strong Interactions: High Energy Hadronic Collisions* ».
A. WETHERELL, CERN, Geneva, Switzerland.
« *Strong Interactions: Mesonic Resonances* ».
G. GOLDBABER, University of California, Berkeley, Calif., U.S.A.
« *Strong Interactions: Baryonic Resonances* ».
L. BARBARO-GALTIERI, University of California, Berkeley, Calif., U.S.A.

* * *

THE FUTURE OF HIGH ENERGY PHYSICS

« *Status of the European Project* ».
J. B. ADAMS, CERN, Geneva, Switzerland.
« *Status of the American Project* ».
R. R. WILSON, National Accelerator Laboratory, Batavia, Illinois, U.S.A.

* * *

SEMINARS ON SPECIALIZED TOPICS

« *Masses and Axial Couplings of Hadrons* ».
F. BUCCELLA, CERN, Geneva, Switzerland.
« *Possible Structure of the Hadrons* ».
N. CABIBBO, University of Rome, Rome, Italy.
« *Invariance Principles and Asymptotic Theorems* ».
S. COLEMAN, Harvard University, Cambridge, Mass., U.S.A.
« *Backward Scattering of Hadrons on Polarized Target* ».
M. FIDECARO, CERN, Geneva, Switzerland.
« *Inelastic Cross-Sections* ».
S. GASIOROWICZ, University of Minnesota, Minneapolis, Minn., U.S.A.
« *Yang-Mills Model of Weak Interactions* ».
S. GLASHOW, Harvard University, Cambridge, Mass., U.S.A.
« *Partons and Deep Inelastic Effects* ».
M. GOURDIN, Laboratoire de Physique Théorique et des Hautes Energies, Orsay, France.
« *Experimental Programme at the CERN Intersecting Storage Rings* ».
W. JENTSCHKE, D.E.S.Y. and Physikalisches Institut der Universität, Hamburg, Germany.
« *Physics with the Bonn Electron Synchrotron* ».
W. PAUL, Physikalisches Institut der Universität, Bonn, Germany.
« *Coherent Interactions in Deuterium* ».
A. PEVSNER, Johns Hopkins University, Baltimore, Maryland, U.S.A.
« *Light-Cone Physics* ».
G. PREPARATA, University of Rome, Rome, Italy.
« *Recent Experimental Results on $\pi\pi$ Interactions* ».
P. SCHLEIN, University of California, Los Angeles, U.S.A.
« *The Problem of the A_1 Structure* ».
P. WEILHAMMER, Max-Planck-Institut für Physik und Astrophysik, Munich, Federal Republic of Germany.
« *Scale Invariance* ».
B. ZUMINO, CERN, Geneva, Switzerland.

CLOSING LECTURE

« *What are Elementary Particles?* ».
V. F. WEISSKOPF, Massachusetts Institute of Technology, Cambridge, Mass., U.S.A.

* * *

THE GLORIOUS DAYS OF PHYSICS

« *My life as a physicist* »
VICTOR F. WEISSKOPF

* * *

PURPOSE OF THE SCHOOL

The school is devoted to those physicists who are interested in having a much deeper theoretical understanding of the field of physics in which they are working. The emphasis of the programme will be on the elucidation and discussion of the progress achieved in the theoretical and experimental understanding of particle physics 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.

In order to exploit to the fullest extent 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 given in afternoon or evening sessions.

POETIC TOUCH

Legend tells that Erice, son of Venus, was the founder, more than three thousand years ago, of a small town on top of a mountain (750 metres above sea level).

Homer (~1,000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Horace (~70 B.C.), Virgil (~20 B.C.), and others have celebrated in their Poems this magnificent spot in Sicily. There you can admire among other beauties the Castle of Venus and the Cyclopean Walls. Other masterpieces of ancient Greek civilization are found in the neighbourhood, such as Motya, Segesta and Selinunte. In the Aegadian Islands (which can be reached by cable car plus hydrofoil boat in about two hours) there are: — prehistoric mural figures in the famous grotto of Levanzo — the Grotte Marine of Marettimo — the recently discovered paleolithic grottoes of Favignana. Finally, splendid beaches (the farthest one at about 40 minutes driving from Erice) are those of San Vito Lo Capo, Scopello, Cornino and the wild ones around Monte Cofano.

Please note:

- We regret 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.
- Enquiries for publications of previous courses:
ACADEMIC PRESS, Inc., 111 Fifth Avenue, New York, N.Y. 10003, U.S.A.

GENERAL INFORMATION

Persons wishing to attend the Course should write to:

The Secretary of the School: Miss Maria ZAINI

CERN

1211 Geneva 23, Switzerland.

They should specify:

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

and include

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

The total fee, including full board and lodging (arranged by the School), is 700 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. This form of financial support will be given 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: March 31, 1971

No special application-form is required

A letter will be sent to successful applicants by April 20. Students having difficulties with travel documentation and who need to know before April 20 whether or not their applications have been accepted, may get 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. Gell-Mann, T. D. Lee, L. A. Radicati, V. F. Weisskopf and A. Zichichi.

Students must be in Erice on July 8 not later than 5 p.m. More detailed information, including the timetable of the lectures, will be sent to successful applicants together with the acceptance letter.

SPECIAL SCHOLARSHIPS

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

AMOS DESHALIT GUNNAR KÄLLEN GIULIO RACAH

They will be awarded, according to the scientific qualifications and financial needs of the applicants, by the Selection Board of the School. These Scholarships cover travel expenses, registration fees, and full board and lodging in Erice. Applicants should specify if they wish to be considered as candidates for these Scholarships.

A. ZICHICHI - DIRECTOR