

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

XIV Course: UNDERSTANDING THE FUNDAMENTAL CONSTITUENTS OF MATTER

ERICE - TRAPANI - SICILY: 23 JULY - 8 AUGUST 1976

Sponsored by the: • Italian Ministry of Public Education • Italian Ministry of Scientific and Technological Research • NATO • Sicilian Regional Government • Weizmann Institute of Science

LECTURERS AND PROGRAMME

OPENING LECTURE

- *75 Years of Equilibrium Statistical Theories*
C. N. YANG, Inst. for Th. Physics, Stony Brook, NY, USA

THEORETICAL LECTURES

- *Critical Phenomena for Field Theorists*
S. WEINBERG, Harvard University, Cambridge, MA, USA
- *Gauge Fields, Magnetic Monopoles and Fibre Bundles*
C. N. YANG, Inst. for Th. Physics, Stony Brook, NY, USA
- *Solitons*
G. C. WICK, Columbia University, New York, NY, USA
- *Can we ever Master Strong Interactions? A proposal*
G. PREPARATA, CERN, Geneva, Switzerland
- *Can Pedestrians Understand the new Particles?*
H. LIPKIN, Weizmann Institute of Science, Rehovot, Israel
- *Are Strong Interactions still within the Regge Framework?*
E. LEADER, University of London, London, UK
- *Hadronization of Quark Theories*
H. KLEINERT, Freie Universität, Berlin, FRG
- *Neutral Currents Phenomenology*
J. J. SAKURAI, UCLA, California, USA, and CERN, Switzerland

REVIEW LECTURES

- *The New Particles*
S.C.C. TING, MIT, Cambridge, MA, USA
- *Weak Currents and new Quarks*
M. GOURDIN, University of Paris, Paris, France
- *Massive Muon Pair Production*
J. W. CRONIN, University of Chicago, Chicago, IL, USA
- *Are Jets really there?*
E. LILLETHUN, University of Bergen, Bergen, Norway
- *Lepton-Strangeness Particle Production by Neutrinos*
W. F. FRY, University of Wisconsin, Madison, WI, USA
- *Probing Nature with Neutrinos*
C. RUBBIA, CERN, Geneva, Switzerland
- *Hadron Physics at FERMI LAB*
T. FERBEL, Rochester University, Rochester, NY, USA
- *Physics at Serpukhov*
Yu. D. PROKOSHIN, Inst. of H.E. Physics, Serpukhov, USSR
- *A Review of the ISR Results*
G. VALENTI, INFN, Bologna, Italy
- *Status of QED and the Heavy Leptons*
A. ZICHICH, CERN, Geneva, Switzerland
- *The Highlights of the Tbilisi Conference*
C. PARIAN, CERN, Geneva, Switzerland

SEMINARS ON SPECIALIZED TOPICS

- *The Electron-Positron Storage Ring PETRA: Plans and Present Status*
G. A. VOSS, DESY, Hamburg, FRG
- *Very High Energy e^+e^- Colliding Beam Machines*
K. JOHNSON, CERN, Geneva, Switzerland
- *Fabrizio Hyperons at High Energy*
O. E. OVERSETH, University of Michigan, Ann Arbor, MI, USA
- *Heavy $q\bar{q}$ Pairs Produced by Pions at FERMI LAB Energies*
A.J.S. SMITH, Princeton University, Princeton, NJ, USA
- *Inclusive Scattering Experiments at FERMI LAB*
D. CUTTS, Brown University, Providence, RI, USA
- *Asymptotic Correlations and Local Conservation of Transverse Momentum*
G. RANFT, Karl-Marx-Universität, Leipzig, GDR
- *Who needs the Zweig's rule?*
H. LIPKIN, Weizmann Institute of Science, Rehovot, Israel
- *Soliton Models of Hadrons*
P. VINCIARELLI, CERN, Geneva, Switzerland
- *Quarks: Colour and Octonions*
F. BUCCELLA, University of Rome, Rome, Italy
- *Field Theory Approach to the Statistical Bootstrap*
E. ETIM, CERN, Geneva, Switzerland
- *Momentum-Max Measurement without Magnet and TOF: Ypsi-onium and Charmonium Imaging*
T. YPSILANTIS, CCSEM, Eris, Italy
- *The Future European High Energy Programme*
G. von DARDEL, University of Lund, Lund, Sweden

HIGHLIGHTS IN OTHER FIELDS

- *Fine Arts and Technology*
R. BERGER, Musée des Beaux Arts, Lausanne, Switzerland
- *Advances in Computers*
L. DADDA, Polytechnic Institute, Milan, Italy
- *The Brain-Mind Problem as a Frontier of Science*
J. C. ECCLES, Contra, Locarno, Switzerland
- *Why do we do Nuclear Physics?*
O. KOFOED-HANSEN, Risø Laboratory, Roskilde, Denmark

THE GLORIOUS DAYS OF PHYSICS

- *One Day of Lectures Celebrating 50 Years of Quantum Mechanics*
Chairman: R.H. DALITZ, University of Oxford, UK
- *Speakers:* I.I. RABI, Columbia University, New York, NY, USA
V.F. WEISSKOPF, MIT, Cambridge, USA
G.C. WICK, Columbia University, New York, NY, USA
E.F. WIGNER, Princeton University, Princeton, NJ, USA

CLOSING LECTURE

- *50 Years of Symmetry Operators*
E. F. WIGNER, Princeton University, Princeton, NJ, USA

PURPOSE OF THE SCHOOL

The School is devoted to those research physicists who are interested in gaining a much deeper theoretical understanding, at a very advanced level, of the field of physics in which they are working. The programme will emphasize 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 the 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.

SPECIAL SCHOLARSHIPS

The following special Scholarships have been established in honour of, and named after, the late Physicists:
PATRICK M. S. BLACKETT JAMES CHADWICK AMOS DE-SHALIT
GUNNAR KALLÉN ANDRÉ LAGARRIGUE GILIO RACAH
These Scholarships cover travel expenses, registration fees and full board and lodging in Erice.

POETIC TOUCH

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.), Virgil (~50 B.C.), Horace (~20 B.C.), and others, have celebrated this magnificent spot in Sicily in their Poems. Among the ruins 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 Aspidan Islands, which can be reached by cable car plus hydrofoil boat in about two hours, there are possible to visit the famous grotto of Lavinia, the Grotto Marine of Marsilione, and the recently discovered prehistoric grottoes of Favignana. There are splendid beaches, the farthest about 40 minutes' drive from Erice, at San Vito Lo Capo, Scopello, Corino, and wild beaches around Monte Cofano.

Please note:

- It is requested 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 course.
- NSF travel grants are restricted to USA citizens. Applications for these should be made as soon as possible through the Director of the School.

SPECIAL ANNOUNCEMENT

Information about the Schools and the activities of the CENTRE can be found in the official Journal of the CENTRE:

GENERAL INFORMATION

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

- Miss MARIA ZAINI
International School of Subnuclear Physics
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 subscription fee is 1000 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.

• PLEASE NOTE that the special Scholarships as well as any other form of financial support 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.

Closing date for application: June 30, 1976

No special application-form is required.

A letter will be sent to successful applicants by July 10. Students experiencing difficulties with travel documentation and needing to know before June 25 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: Prof. G. Bernardini, N. Cabibbo, R. H. Dalitz, M. Gell-Mann, T. D. Lee, A. Martin, L. A. Radicati, V. F. Weisskopf and A. Zichich.

Students must be in Erice on July 23 not later than 3 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. ZICHICH - DIRECTOR



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