

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

XVIII Course: THE HIGH ENERGY LIMIT

ERICE-TRAPANI-SICILY: 31 JULY-11 AUGUST 1980

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

PROGRAMME AND LECTURERS

OPENING LECTURE

- Is the next Energy Step at Planck Energies?
- S. ADLER, Institute of Advanced Study, Princeton, NJ, USA

THEORETICAL LECTURES

- Non-Local Gauge Theories
- S. ADLER, Institute of Advanced Study, Princeton, NJ, USA
- How far we are in Unifying the Fundamental Interactions
- F. BUCELLA, University of Rome, Rome, Italy
- Has the Planck Mass Anything to do with Particle Physics?
- V. DE ALFARO, University of Turin, Turin, Italy
- Electroweak Physics of the 80s
- J.J. SAKURAI, UCLA, Los Angeles, CA, USA
- Conservation Laws and Linearization of Gauge Fields
- L.L. WANG, Brookhaven National Lab, Upton, NY, USA
- SU(5) without SU(5)
- H.J. LIPKIN, FERMILAB, Batavia, IL, USA

SEMINARS ON SPECIALIZED TOPICS

- Neutrino Oscillations. — Theoretical
- R. BARBIERI, CERN, Geneva, Switzerland
- The HPW Experiment to Search for Proton Decay and Neutrino Oscillations
- D. CLINE, University of Wisconsin, Madison, WI, USA
- Quark Masses from the Vector Meson Spectrum
- E. ETIM, Universität Siegen, Siegen, FRG
- Why most Flavor Dependence Predictions for Non Leptonic Charm Decays are Wrong
- H.J. LIPKIN, FERMILAB, Batavia, IL, USA
- Prospects for Polarized Electrons at High Energies
- C.Y. PRESCOTT, SLAC, Stanford, CA, USA
- Early Weak Gauge Bosons
- D. SCHILDKNECHT, University of Bielefeld, Bielefeld, FRG

- Theoretical Implications on Isabelle Physics
- L.L. WANG, Brookhaven National Lab, Upton, NY, USA
- Evidence for a Close Link between (pp) and (e'e) Physics
- A. ZICHICHI, CERN, Geneva, Switzerland

REVIEW LECTURES

- Hadron Interactions
- S.J. LINDENBAUM, BNL, Upton, NY, and City College, NY, NY, USA
- Exotic Multiquark States with Charm
- H.J. LIPKIN, FERMILAB, Batavia, IL, USA
- Status of the Charmed Particles
- F. MULLER, CERN, Geneva, Switzerland
- Deep Inelastic Phenomena
- C.Y. PRESCOTT, SLAC, Stanford, CA, USA
- The Heavy Lepton
- S.C.C. TING, MIT, Cambridge, MA, USA and DESY, Hamburg, FRG
- Neutrino Physics
- J. STEINBERGER, CERN, Geneva, Switzerland
- (e'e) Physics
- in the USA: C.W. PECK, CALTECH, Pasadena, CA, USA
- at NOVOSIBIRSK: V. SIDOROV, Siberian Div. of the USSR Academy of Science, Novosibirsk, USSR
- at ORSAY: J. PEREZ-Y-JORDA, LAL, Orsay, France
- at PETRA: P. DUINKER, DESY, Hamburg, FRG

HIGHLIGHTS IN OTHER FIELDS

- Advances in Computers
- L. DADDA, Polytechnical Institute, Milan, Italy
- Language, Thought and Brain
- J.C. ECCLES, Contra, Locarno, Switzerland

CLOSING LECTURE

- What have we learned?
- E.P. WIGNER, Princeton University, Princeton, NJ, USA

PURPOSE OF THE SCHOOL

In spite of the spectacular results obtained in recent times, Subnuclear Physics is far from reaching the asymptotic limit of a field without a future. This is testified by the large number of problems which open up at a rate at least comparable with that of new results. The high energy limit has acquired a great interest in recent times. The key problem is to understand how Nature goes from GUT-energy down to 10¹⁶ GeV. Some theorists argue that they understand even how Nature goes from Planck to 10¹⁶ GeV energy. They would predict the existence of an immense desert from 10¹⁶ up to the most important energy level of 10¹⁴-10¹³ GeV. Other theorists propose that the next energy step is much nearer, as for example 10¹⁰ GeV, where an immense series of new phenomena could start. There are also those who deny the validity of the speculations based on the Planck energy level. The School will be devoted to a review of the very low energy corner where we are all working at present; and to a discussion of what the future could be for Subnuclear Physics before the end of this century.

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 KALLEN	ANDRÉ LAGARRIGUE	GIULIO RACAH

These Scholarships cover 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 (~1,000 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 sights 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 Aegean 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, Corino, and wild beaches around Monte Cofano.

GENERAL INFORMATION

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

• MRS MARIA ZAINI
International School of Subnuclear Physics
CERN - 1211 Genève 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 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.

• 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 judgment of all the applicants.

Closing date for application: July 20, 1980

No special application form is required

A letter will be sent to successful applicants by July 25. Students experiencing difficulties with travel documentation and needing to know before July 25, whether or not their applications have been accepted, may obtain an earlier special decision by submitting a justified request.

Students must be in Erice on July 31 not later than 5 p.m. Please note that the Calendar Holidays and the School Holidays are totally uncorrelated. More detailed information will be sent to successful applicants together with the letter of acceptance.

A. ZICHICHI - DIRECTOR

SPECIAL ANNOUNCEMENT

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



Progress in Scientific Culture
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