

INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS

20th Course: GAUGE INTERACTIONS: THEORY AND EXPERIMENT

ERICE-TRAPANI-SICILY: 3-14 AUGUST 1982

Sponsored by the:

- European Physical Society • Italian Ministry of Education
- Italian Ministry of Scientific and Technological Research
- Sicilian Regional Government • Weizmann Institute of Science

PROGRAMME AND LECTURERS

OPENING LECTURE

Unification of the fundamental gauge interactions
• C.N. YANG, SUNY, Stony Brook, NY, USA

THEORETICAL LECTURES

- Foundations of gauge theories and present status
• C.N. YANG, SUNY, Stony Brook, NY, USA
- Supersymmetry and unification of particle interactions
• S. FERRARA, CERN, Geneva, Switzerland
- Experimental implications of gauge theories
• D. NANOPOULOS, CERN, Geneva, Switzerland
- Testing QCD in purely hadronic processes
• P. LANDSHOFF, University of Cambridge, Cambridge, UK
- QCD predictions for heavy-flavour production
• R. ODORICO, University of Bologna, Bologna, Italy
- Alternatives to the standard model of the electroweak interactions
• J.J. SAKURAI, MPI, Munich, FRG
- Exact results for (pp) and (p \bar{p}) at extreme energies
• A. MARTIN, CERN, Geneva, Switzerland

SEMINARS ON SPECIALIZED TOPICS

- Photon scattering at very high energies
• C.A. HEUSCH, University of California, Santa Cruz, Calif., USA
- Higgs particles from gauge fields
• H. KLEINERT, Free University Berlin, Berlin, FRG
- Results from the CERN "p \bar{p} " collider
• C. RUBBIA, CERN, Geneva, Switzerland
- Experimental proposal for LEP
• G. WOLF, DESY, Hamburg, FRG

REVIEW LECTURES

- Review of high-energy e⁺e⁻ physics
• J. BRANSON, MIT, Cambridge, Mass., USA
- Status of and search for new leptons at PETRA
• P. DUINKER, NIKHEF, Amsterdam, NL, and DESY, Hamburg, FRG
- The photon structure function
• Ch. BERGER, I. Physikalisches Institut der RWTH, Aachen, FRG
- Status of deep inelastic phenomena
• F. EISELE, University of Dortmund, Dortmund, FRG
- Heavy flavours produced in hadronic interactions
• F. MULLER, CERN, Geneva, Switzerland
- High-energy soft (pp) interactions compared with (e⁺e⁻) and DIS
• A. ZICHICHI, CERN, Geneva, Switzerland

THE GLORIOUS DAYS OF PHYSICS

- A round table with:
- P.A. CHERENKOV, USSR Academy of Sciences, Moscow, USSR
 - CHIEN SAN-QIAN, Chinese Academy of Sciences, Beijing, China
 - P.A.M. DIRAC, Florida State University, Tallahassee, Fla., USA
 - E. TELLER, University of California, Livermore, Calif., USA
 - E.P. WIGNER, Princeton University, Princeton, NJ, USA
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* C.N. YANG, — My life as a physicist *

CELEBRATION OF C.N. YANG'S BIRTHDAY

- E. TELLER, University of California, Livermore, Calif., USA

CLOSING LECTURE

- What I think of gauge theories
• P.A.M. DIRAC, Florida State University, Tallahassee, Fla., USA

PURPOSE OF THE COURSE

On the occasion of the 60th birthday of Chen Ning Yang, the Ettore Majorana Centre has decided to pay tribute to the outstanding scientific achievements of one of the most prominent scientists of our time, by dedicating the 20th Course of the International School of Subnuclear Physics to a review of the present status of one of the fields of physics where C.N. Yang has contributed most profoundly.

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 KÄLLEN	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 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, and Cornino, and wild beaches around Monte Cofano.

GENERAL INFORMATION

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

- Miss MARIA ZAINI
International School of Subnuclear Physics
CH - 1211 Genève 23 - Switzerland

They should specify:

- i) date and place of birth together with their present nationality;
- ii) degree and present academic position;
- 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 another senior physicist active in the field.

The subscription fee is SF 1,000. Thanks to the generosity of the sponsoring institutions, partial support can be given to some deserving students who need financial help. The request for such aid must be specified and justified in the letter of application.

• **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: 20 July 1982

No special application form is required

A letter will be sent to successful applicants by 25 July 1982. Applicants who may have difficulties with travel documents and who would need to know before 25 July whether or not their applications have been accepted, may obtain a special earlier decision by submitting a justified request.

Participants must be in Erice on 3 August, not later than 5 p.m. More detailed information will be sent to successful applicants together with the letter of acceptance.

A. ZICHICHI - DIRECTOR