



Lectures:

- Neutrino Masses
- CP-Violation
- Higgs Physics

Special Seminars:

- Neutrino Experiments
- Physics at Gran Sasso
- Supersymmetric Gauge Theories
- Kaonic atoms

EurodaΦne Sessions:

- K-physics
- Hadronic e^+e^- cross-sections
- Radiative ϕ -decays
- Reports from the Working Groups

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INFN - LABORATORI NAZIONALI DI FRASCATI

LNF-99/037 (IR)

22 Dicembre 1999

LNF SPRING SCHOOL IN NUCLEAR AND SUBNUCLEAR PHYSICS

Frascati, 12-17 April, 1999

To be held jointly with
the IX EURODAΦNE
Collaboration Meeting



INFN - LABORATORI NAZIONALI DI FRASCATI
SIS - PUBBLICAZIONI

LNF - 99/037 (IR)
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&
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THE ORGANIZING COMMITTEE

Volume prepared by Angela Mantella

Frascati, 20 December 1999

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LNf SPRING SCHOOL and IX Eurodaphne Collaboration Meeting

Frascati, 12-17 April, 1999

Programme

Monday 12th of April

- 9:00 Registration and Welcome by P. Laurelli
Chair: P. Franzini
Scientific Secretary : G. Cabibbo
- 9:30-11:00 **G. Altarelli** (Rome3 U. & CERN) Neutrino Masses: a Theoretical Introduction (I)
- 11:00-11:30 *Coffee Break*
- 11:30-12:00 **P. Shawhan** (U. of Chicago) New Results from KTeV on CP-violation
- 12:05-12:35 **C. Biino** (INFN Torino) Results from NA48
- 12:40-13:10 **J.P. Perroud** (U. de Lausanne) Results from HyperCP
- 13:30 *Lunch at ENEA Cafeteria*
Chair: G. Capon
- 14:30-16:00 **G. Martinelli** (La Sapienza U.) CP-violation in the K-system
- 16:00-16:30 *Coffee Break*
Chair: M. Lusignoli
Scientific Secretary: G. Hiller
- 16:30-17:00 **M. Fabbrichesi** (SISSA) Estimates of ϵ'/ϵ within the Standard Model
- 17:05-17:35 **T. Hambye** (LNF) $K \rightarrow \pi\pi$ Amplitudes in $1/N_c$ Expansion
- 17:40-18:10 **M. Ciuchini** (Rome3 U.) Supersymmetry in K-decays (I)
- 18:15-18:45 **G. Isidori** (LNF) Supersymmetry in K-decays (II)

Welcome Party in High Energy Hall

Tuesday 13th of April

Chair: L. Votano

9:30-11:00 **G. Altarelli** (Rome3 U. & CERN) Neutrino Masses: a Theoretical Introduction (II)

11:00-11:30 *Coffee Break*

Chair: M. Piccolo

11:30-12:00 **A. Ferrari** (Rome1 U.) ϵ'/ϵ with the KLOE Detector

11:05-12:55 **E. Franco** (U. La Sapienza) CP-violation in the B-system

13:30 *Lunch at ENEA Cafeteria*

Chair: F. Ronga

14:30-15:10 **A. Bettini** (LNGS & Padova U.) Physics at the Gran Sasso Laboratory

15:15-15:55 **P. Lipari** (U. La Sapienza) Present Status of Neutrino Experiments

16:00-16:30 *Coffee Break*

16:30-17:00 **G. Bellini** (Milan U.) Detection of Solar Neutrinos

17:05-17:35 **P. Strolin** (Naples U.) Long Base-line Neutrino Physics in Europe

17:40-18:10 **S. Wojcicki** (SLAC) The Minos Program

18:15-18:55 **T. Tabarelli** (Milan U.) Atmospheric Neutrinos

19:15 *Transportation back to Frascati*

Wednesday 14th of April

9:00 Departure from LNF for L'Aquila and INFN Gran Sasso Underground Laboratories

18:00 Return to Frascati

Thursday 15th of April

Chair: J. Lee-Franzini

Scientific Secretary: G. Lanfranchi

- | | | |
|-------------|---|---|
| 9:30-9:55 | L. Pontecorvo (INFN Roma) | Status Report from KLOE Experiment |
| 10:00-10:2 | B. Lauss (IMEP) | Status Report from DEAR Experiment |
| 10:30-11:55 | V. Lucherini (LNF) | Status Report from FINUDA Experiment |
| 11:00-11:30 | <i>Coffee Break</i> | |
| 11:30-11:55 | J. Bijnens (Lund U.) | The $\Delta I=1/2$ Rule in the Chiral Limit |
| 12:00-12:25 | V. Lyubovitskij (Bern U.) | Nonrelativistic Effective Lagrangian For Pionium |
| 12:30-12:55 | A. Rusetsky (Bern U.) | Lifetime of the $\pi^+\pi^-$ Atoms |
| 13:30 | <i>Lunch at ENEA Cafeteria</i> | |
| 14:30-15:10 | <i>Visit to Daφne, Kloe and Finuda</i> | |
| | Chair: F. Palumbo | |
| | Scientific Secretary: R. Scimia | |
| 15:15-15:55 | F. Jegerlehner (DESY-Zeuthen) | Hadronic Cross-section and Precision Tests of the Standard Model |
| 16:00-16:30 | <i>Coffee Break</i> | |
| | Chair: V. A. Khoze | |
| 16:30-16:55 | G. Venanzoni | Measurement of Hadronic Cross Sections with a Radiated Photon in the Initial State with the KLOE Detector |
| 17:00-18:30 | G. Kane (Michigan U.) | The Hunting of the Higgs (I) |
| 18:55 | <i>Transportation back to Frascati from ENEA gate</i> | |
| 20:30 | <i>Conference Dinner at Cacciani Restaurant in Frascati</i> | |

Friday 16th of April

Chair: R. Baldini

9:30-11:00 **G. Kane** (Michigan U.) The Hunting of the Higgs (II)

11:00-11:30 *Coffee Break*

Chair: F.L. Fabbri

11:30-12:00 **M. Pepe-Altarelli** (LNF & CERN) Searches for Higgs Boson at LEP

12:05-12:35 **G. Chiarelli** (Pisa U.) Searches for the Higgs Boson at Fermilab

12:40-13:10 **B. Esposito** (LNF) Searches for Higgs Boson at LHC

13:30 *Lunch at ENEA Cafeteria*

Chair: J. Gasser

Scientific Secretary: P. De Simone

14:30-15:00 **H. Leutwyler** (Bern U.) Recent Work on Chiral Perturbation Theory

15:05-15:30 **J. Kuehn** (U. of Karlsruhe) Measuring $\sigma(e^+e^- \rightarrow \text{Hadrons})$ Using Tagged Photon

15:35-16:00 **S. Ong** (IPN Orsay) Two-photon Reactions with the KLOE Detector at DaΦne

16:00-16:30 *Coffee Break*

Chair: M.R. Pennington

Scientific Secretary: A. Farilla

16:30-17:00 **E.P.Solodov**(Novosibirsk) Study of ϕ -decays in $\pi^+\pi^-\gamma$, $\pi^0\pi^0\gamma$, $\eta\pi^0\gamma$

17:05-17:35 **P. Gauzzi** (Roma1 U.) f_0 , a_0 Measurement with KLOE

16:40-18:10 **N. Achasov** (Novosibirsk) On the Nature of the Scalar $a_0(980)$ and $f_0(980)$

18:55 *Transportation back to Frascati from ENEA gate*

Saturday 17th of April

EURODAPHNE Collaboration Meeting

9:30-9:55	E. Shabalin (ITEP)	Resonance Chiral Theory of $\pi\pi$ scattering
10:00-10:25	G. Amoros (U. of Lund)	Parametrization for $K^+ \rightarrow \pi^+ \pi^- e^+ \eta$
10:30-10:55	E. De Lucia (U. Roma1)	Kaon Form Factors with the KLOE Detector
11:00-11:30	<i>Coffee Break</i>	
	Chair: J. Stern	
11:30-11:55	H. Neufeld (U. of Wien)	Virtual Photons and Leptons in Chiral
12:00-12:25	G. Mueller (U. of Wien)	Electromagnetic Corrections to Pion-nucleon Interactions in CHPT
12:30-12:55	L. Girlanda	An Alternative Method of Extracting the Quark Condensate: the Decays $\tau \rightarrow 3\pi\nu_\tau$
13:00-13:30	<i>Lunch at LNF Coffee shop</i>	
	Chair: A. Bramon	
14:30-14:55	G. Hiller (LNF)	CP-conserving Contribution to the Transverse Muon Polarization in $K^+ \rightarrow \mu\nu\gamma$
15:00-15:25	E. Marco (T. U. of Muenchen)	Radiative Decays of ρ^0 and ϕ in a Chiral Unitary approach
15:30-15:55	F. Scuri (Trieste U.)	Measurement of ϕ -radiative Decays into η, η' with KLOE Detector

Concluding Remarks

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