



### Lectures:

- CP violation in the K and B meson systems
- QCD and the Proton Structure
- Neutrino Physics
- Physics of Extra Dimensions
- Early Universe Phenomenology

### Sessions:

- Statistical Methods for Particle Physics
- Physics at the Gran Sasso Laboratory
- Updates on Higgs and SUSY Searches
- Hadronic Physics with DAPHNE
- Skewed Parton Distributions

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INFN - LABORATORI NAZIONALI DI FRASCATI

LNF-02/012(IR)  
28 Giugno 2002

# VII LNF SPRING SCHOOL

“BRUNO TOUSCHEK”

IN NUCLEAR, SUBNUCLEAR AND  
ASTROPARTICLE PHYSICS

Frascati, 20-24 May, 2002



INFN – LABORATORI NAZIONALI DI FRASCATI  
SIS – PUBBLICAZIONI

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## ***ACKNOWLEDGEMENTS***

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*THE ORGANIZING COMMITTEE*

The transparencies of talks and lectures can be downloaded directly from the  
<http://www.lnf.infn.it/conference/lnfss/>

Technical Editor  
*Luigina Invidia*

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**VII LNF SPRING SCHOOL**  
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*LNF, May 20<sup>th</sup> - 24<sup>th</sup>, 2002*



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## *Program*

### *Monday May 20th*

- 8:30            Bus from Frascati Comune to LNF (8:40 stop at the beginning of Via E. Fermi -ASL)
- 8:45- 9:30     Registration
- Chair: P. Laurelli (LNF)
- 9:30            Welcome by the LNF Director S. Bertolucci
- 9:40-10:20    R. Kolb (CERN and FNAL)                    Cosmology (I)
- 10:25-11:05   R. Kolb (CERN and FNAL)                    Cosmology (II)
- 11:10-11:40   *Coffee Break*
- 11:40-12:20   A. de Rujula (CERN)                            The Physics of Neutrinos (I)
- 12:25-13:05   A. de Rujula (CERN)                            The Physics of Neutrinos (II)
- 13:30           *Lunch at ENEA Cafeteria*
- Chair: F. Palumbo (LNF)
- 15:00-16:00   S. Ferrara (CERN and LNF)                    Update on M-Theories
- 16:00-16:30   *Coffee Break*
- 16:30-17:30   A. Bettini (LNGS)                                Perspectives in Particle Astrophysics
- 17:30           Visit to LNF facilities
- 19:00           Polyphonic Concert: Chorus of Physics Students from U. Roma "La Sapienza"
- 20:00           *Welcome Party in High Energy Hall*
- 21:00           Bus from LNF to Frascati Comune

## ***Tuesday May 21th***

- 9:00 Bus from Frascati Comune to LNF  
Chair: L. Votano (LNF)
- 9:30-10:10 R. Kolb (CERN and FNAL) Cosmology (III)  
10:15-10:55 R. Kolb (CERN and FNAL) Cosmology (IV)
- 11:00-11:30 *Coffee Break*
- 11:30 -12:10 A. de Rujula (CERN) The Physics of Neutrinos (III)  
12:15-12:55 A. de Rujula (CERN) The Physics of Neutrinos (IV)
- 13:30 *Lunch at ENEA Cafeteria*  
Chair: M. Piccolo (LNF)
- 15:00-15:55 P. De Bernardis (U. of Rome "La Sapienza") Mapping the early universe with the CMB
- 16:00-16:30 *Coffee Break*  
Chair: R. Baldini (LNF)
- 16:30-16:55 H. Pirner (U. Heidelberg) Wilson line correlations and low-x
- Young Researcher Session (I)**
- 17:00-17:15 F. Petrucci (U. Roma Tre) The muon tracking detectors of the ATLAS spectrometer  
17:20-17:35 O. Cata' (U.A. Barcelona) Example of resonance saturation at one-loop  
17:40-17:55 R. Unterdorfer (U. Vienna) Four pion production in  $e^+e^-$  annihilation  
18:00-18:15 M. Pierini (U. Roma "La Sapienza") Charmless two-body decays of B-mesons  
18:20-18:35 G. Garbarino (U. Barcelona) Bell's theorem without inequalities for entangled kaons
- 19:00 Bus to Casale Marchese
- 19:15 *Wine and cheese at local winery Casale Marchese*
- 22:00 Bus from LNF to Frascati Comune

## ***Wednesday May 22th***

- 9:00 Bus from Frascati Comune to LNF  
Chair: M. Curatolo (LNF)
- 9:30-10:55 P.M. Guichon (CEA Saclay) Generalized Parton Distributions (I, II)
- 11:00-11:30 *Coffee Break*
- 11:30-12:30 F. Palombi (U. Tor Vergata) Parton Distributions from the lattice
- 15:30-19:00 ESOP Midterm Review Taking place in Touschek Auditorium
- 13:00 *Departure for INFN Gran Sasso Underground Laboratories*
- 18:00 Bus leaves Gran Sasso for Frascati Comune
- 19:00 Bus from LNF to Frascati Comune for the participants of ESOP Midterm Review



## ***Thursday May 23th***

8:30	Bus from Frascati Comune to LNF	
9:00-12:30	LNF Scientific Committee Open Session	
9:30-18:40	ESOP Midterm Review	Taking place in room A34 in High Energy Building
11:00-11:30	<i>Coffee Break</i>	
13:30	<i>Lunch at ENEA Cafeteria</i>	
	Chair: M. Lusignoli (U. Roma "La Sapienza")	
15:00-15:55	A. Masiero (U. Padova)	Indirect searches for new Physics in rare and CP-violating processes
16:00-16:30	<i>Coffee Break</i>	
16:30-17:25	R. Aleksan (CEA Saclay)	Recent results on B-physics
	<b>Young Researcher Session (II)</b>	
17:30-17:45	N. Fabiano (U. Perugia)	Two Photon Width of Heavy Pseudoscalar Mesons
17:50-18:05	C. Gatti (U. Pisa)	Kloe results on KS decays
18:10-18:25	D. Leone (U. Roma "La Sapienza")	Kloe results on Phi radiative decays
18:30-18:45	M. Martemianov (LNF)	Kloe results on charged kaons
19:00	Bus from LNF to Frascati Comune	
20:00	<i>Conference Dinner</i>	

## ***Friday May 24th***

9:00	Bus from Frascati Comune to LNF	
	Chair: J.-M. Laget (CEA Saclay)	
9:30 -10:10	P.M. Guichon (CEA Saclay)	Generalized Parton distributions (III)
10:15-10:55	P.M. Guichon (CEA Saclay)	Generalized Parton distributions (IV)
11:00-11:30	<i>Coffee Break</i>	
11:30-12:10	G. Altarelli (CERN and U. Roma Tre)	GUT's 2002 (I)
12:15-12:55	G. Altarelli (CERN and U. Roma Tre)	GUT's 2002 (II)
13:30	<i>Lunch at ENEA Cafeteria</i>	
	Chair: P. Franzini (U. Roma "La Sapienza")	
15:00-15:40	A. Bramon (U. A. Barcelona)	Scalar and pseudoscalar mesons: some mysteries still to be solved
15:45-16:25	S. White (BNL)	The Equivalent Photon Approximation from Enrico Fermi until the present
16:30-17:00	<i>Coffee Break</i>	
17:00-17:40	B. Foster (Bristol U.)	HERA physics
17:45-18:25	G. Salvini (U. Roma "La Sapienza")	An outlook to LHC
19:00	Bus from LNF to Frascati Comune	