

First Workshop on Quark-Hadron Duality and the Transition to pQCD

Organized and supported by:
Istituto Nazionale di Fisica Nucleare (INFN)
Thomas Jefferson National Accelerator Facility (JLAB)
University of Virginia (UVA)
Hampton University (HU)

Laboratori Nazionali di Frascati, Italy, June 6-8 2005

Aim of the Workshop

The aim of this workshop is to discuss recent and existing results, and to foster current and future research, investigating the phenomenon of quark-hadron duality. Whereas perturbative QCD methods fully describe experimental results at high energies, and chiral perturbation theory is the low energy effective theory of the strong interactions, a form of duality is observed transcending these two regimes. In these intermediate kinematics, a wide variety of reactions are observed which can be described simultaneously by single particle (quark) scattering, and by exclusive resonance (hadron) scattering. This dedicated workshop is aimed at bringing together for the first time researchers from different areas of hadronic physics, dealing with different manifestations of quark-hadron duality, to address as one group this exciting topic.

Main Topics

- Bloom and Gilman's Quark-Hadron Duality
- Unpolarized and Polarized electron scattering
- QCD Sum Rules, Large N_c , Constituent Quark Models
- Local Quark-Hadron Duality and the Structure of Hadronic Jets
- Duality and Meson Spectra
- Duality in Nuclei
- Duality in Neutrino Scattering
- α_s at Low Q^2 , Large x PDFs
- Generalized Parton Distributions.

Preliminary and Partial list of speakers and subjects

- Introduction: C. Carlson (Phys. Dept. College of William and Mary)
- Duality unpolarised: R. Ent (Jlab)
- Duality polarised: H. Block (Vrije Universiteit and NIKHEF)
- Duality in SIDIS: H. Avakian (Jlab)
- GDH experimental: Z.E. Meziani (Temple University)
- Quark models: W. Melnitchouk (Jlab)
- Heavy Mesons: L. Oliver (Orsay, LPT)
- Statistical Quark Model: J. Soffer (Marseille, CPT)
- Extrapolation to Chiral Limit: A. Thomas (Jlab)
- α_S : A. Deur (Jlab)
- Photoproduction: Reggeon/Pomeron Low Q^2 : A. Donnachie (Manchester University)
- Photoproduction: H. Gao (TUNL, Durham and Duke University)
- Onset of scaling in exclusive processes: M. Mirazita (INFN Frascati)
- n/p: N. Liyanage (University of Virginia)
- Photoproduction on nuclei: S. Schadmand (Giessen University)
- Quark-hadron duality in nuclear hadronization : X.N. Wang (BNL)
- SIDIS in nuclei: V. Muccifora (INFN Frascati)
- Hadronic gas and QGP in heavy ion interaction and dilepton: R. Venugopalan (BNL and Bielefeld University)
- QGP observation at SPS/RHIC and perspective for Alice: P. Giubellino (INFN Torino)
- Polarised parton distributions from global fits: J. Blumlein (DESY)
- Scales of QCD: A. Vainshtein (Minnesota University)
- Conformal field theory : G. de Teramond (University of Costa Rica)
- Theoretical talk on GPD: M. Guidal (Orsay, IPN)
- Experimental overview on exclusive processes: D. Hasch (INFN Frascati)
- Future perspectives at JLAB: K. De Jager (Jlab)
- Future perspective at GSI: F. Rathmann (Juelich)
- Summary: P. Hoyer (Helsinki University and Helsinki Institute of Physics)

Contributions

If you want to present a talk please send an e-mail to duality05@lnf.infn.it with a short description of the subject.

Contact

Conference e-mail: duality05@lnf.infn.it
Web site: http://www.lnf.infn.it/conference/duality05/
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Proceedings

The proceedings of the Workshop will include all talks. Detailed information will be provided later.

Registration

The registration fee is **200.⁰⁰** Euros.

It must be paid cash at the Registration Desk (no advance payment, no checks, no credit or debit cards), and includes: conference proceedings and bags, bus service hotel-LNF-hotel, lunch tickets, coffee breaks, a social dinner and a concert for violin and piano.

Hotels

- Special accommodation rates have been arranged with the Hotel Villa Mercede for the conference period (Saturday June 4 - Thursday June 9, 2005). Villa Mercede provides a shuttle bus service to/from the Frascati and Tor Vergata Railway stations (bus reservations can be asked directly to the hotel).

Please, note that only a limited number of rooms has been booked for the meeting. Therefore, in order to guarantee your hotel reservation, **you are kindly requested to register as soon as possible** using the Registration/Reservation form available on the Web site. The deadline is April 5, 2005 .

Rates for participants	
Single room - B&B:	Euro 60,00 pppg*
Double room - B&B:	Euro 44,00 pppg
Triple room - B&B:	Euro 32,00 pppg
*per person per day	

How to reach the LNF

The city of [Frascati](#) is located 20 Km south-east of Rome and about 50 Km west of "Fiumicino" Airport.

The Frascati National Laboratories are about 2 Km from Frascati [downtown](#).

- **Participants arriving by plane:**

From the Airport to Frascati you can catch a taxi. Yellow or White licensed cabs are strongly advised.

From Fiumicino Airport you have to catch the "Leonardo Express" train to the "Roma Termini" railway station. Trains depart nearly every [hour](#).

From Roma Termini central railways station to Laboratories:

Train ([FM6](#)) to Tor Vergata station (close to LNF): catch the train for Frosinone or for Cassino and get out at the Tor Vergata station (from Roma Termini it is the second stop). Turn left, LNF is 100 meters up.

Check the timetables because not all the trains to Frosinone or to Cassino stop at the Tor Vergata station.

From Roma Termini central railways station to Frascati downtown:

Catch a train ([FM4](#)) to Frascati

- **Participants arriving by car :**

If you are coming by car, take the ring road "Grande Raccordo Anulare" then take exit 21-22, and follow the Frascati road sign. Drive along the Via Tuscolana road for about 9 Km to get to the Frascati town hall. To reach the National Laboratories you must take Via E. Fermi on the Via Tuscolana (on the left side coming from the Grande Raccordo Anulare) about 8 Km from the Grande Raccordo Anulare. There is an INFN sign on the left corner of the Tuscolana-Fermi intersection. Follow the indications on the [map](#).

Organizing Committee

- **N. Bianchi (LNF, co-chair)**
- **J. P. Chen (JLAB, co-chair)**
- **P. Di Nezza (LNF)**
- **A. Fantoni (LNF, co-chair)**
- **C. Keppel (Hampton U., JLAB)**
- **S. Liuti (UVA, co-chair)**
- **V. Muccifora (LNF)**
- **F. Ronchetti (LNF, web master)**
- **O. Rondon(UVA)**

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- J. Soffer (Marseille U.)
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- A.W. Thomas (JLAB)
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