

ICTP – [The Abdus Salam International Centre for Theoretical Physics](#), Trieste, Italy

smr1320/Announcement

SUMMER SCHOOL on
LOW-DIMENSIONAL QUANTUM SYSTEMS: Theory and Experiment

16 - 27 July 2001

Miramare-Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics, (ICTP), will organize the Summer School on Low-Dimensional Quantum Systems: Theory and Experiment to be held in Trieste during 16 - 27 July 2001. The School will be directed by Professors M. Fabrizio (SISSA ICTP, Trieste, Italy), A. A. Nersesyan (ICTP Institute of Physics, Tbilisi, Georgia), H. Saleur (University of Southern California, USA), A. Tsvetik (Brookhaven, Stony Brook, USA Oxford UK) and Yu Lu (ICTP Academia Sinica, Beijing, China). The local organizers will be Professors M. Fabrizio and A. A. Nersesyan.

The School will bring together experimentalists, condensed matter theorists and mathematical physicists, specializing in one-dimensional quantum physics. It will target all groups of researchers, starting from graduate students and postdocs, including those from developing countries, to well-established independent researchers. The purpose of this meeting is to create a wider international community, making it aware of recent advances in theory and experiment, stimulate interaction and cooperation among the researchers and help young participants to concentrate on the most challenging problems in low-dimensional quantum physics. The School will mostly serve pedagogical purposes and, thus, will include pretutorials and a number of extensive lecture courses given by experts. At the same time, there will be an ample room for original presentations.

The topics covered by the School include introduction to Abelian and non-Abelian bosonization, Introduction to Ising model, and Integrability and Formfactor method (with applications), quasi-one-dimensional magnetism including frustrated systems, experimental and theoretical situation in organics, physics of nanotubes and quantum dots, and recent trends in the theory of two-dimensional noninteracting disordered systems with application of the non-perturbative methods used in one-dimension.

The list of Lecturers and Speakers (as of 19 June 2001) includes:

- A. Abanov (Stony Brook)
- I. Affleck (Vancouver)
- N. Andrei (Rutgers)
- M. Aronson (Michigan)
- P. Azaria (Pierre et Marie Curie)
- S. Brazovskii (Orsay)
- A. Chubukov (Wisconsin-Madison)
- D. H. Cobden (Warwick)
- D. Delfino (SISSA)
- L. Degiorgi (ETH-Zurich)
- F. H. L. Essler (Warwick)
- M. Fabrizio (SISSA)
- T. Giamarchi (Orsay)
- L. Glazman (Minnesota)

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A. O. Gogolin (Imperial College, London)
I. Gruzberg (Santa Barbara)
S. Haas (University of Southern California)
A. Honecker (Braunschweig)
D. V. Khveshchenko (NORDITA)
V. E. Kravtsov (ICTP)
P. Lecheminant (Cergy Pontoise)
A. W. W. Ludwig (Santa Barbara)
S. Lukyanov (Rutgers)
P. A. Marchetti (Padova)
D. Maslov (Gainesville)
G. Mussardo (SISSA)
S. Nagler (Oak Ridge)
A. A. Nersesyan (ICTP)
L. Radzichovsky (CU Boulder)
H. Saleur (University of Southern California)
D.A. Tennant (Oxford)
A. Tsvelik (Brookhaven Oxford, UK)
V. M. Yakovenko (Maryland)
Z. Zheludev (Brookhaven)

TITLES OF TALKS (as of 19 June 2001)

Alexander ABANOV

THETA TERMS IN NONLINEAR SIGMA MODELS

Ian AFFLECK

QUANTUM SPIN CHAINS: THEORY AND EXPERIMENT

Natan ANDREI

CONDUCTIVITY OF A LONG CLEAN WIRE

Meigan ARONSON

ORDER AND DISORDER NEAR T=0 MAGNETIC PHASE TRANSITIONS

Patrick AZARIA

EFFECTS OF ORBITAL DEGENERACY IN ONE DIMENSION

Sergei BRAZOVSKI

(principle talk)

(with N. Kirova)

TOPOLOGICAL CHARACTER OF EXCITATION IN STRONGLY CORRELATED ELECTRONIC SYSTEMS:
CONFINEMENT AND DIMENSIONAL CROSSOVER

(with P. Monceau and F. Nad)

THE FERROELECTRIC MOTT-HUBBARD PHASE:

THEORY VERSUS EXPERIMENT IN ORGANIC CONDUCTORS

(with Matveenko)

THE INSTANTON APPROACH TO PSEUDOGAPS IN PHOTOEMISSION AND OPTICAL SPECTRA
OF 1D SYSTEMS

Andrey CHUBUKOV

QUANTUM-CRITICAL SUPERCONDUCTIVITY

David COBDEN

1D QUANTUM DOTS AND WIRES FROM CARBON NANOTUBES

Leonardo DEGIORGI

DIMENSIONALITY AND CORRELATIONS

Gesualdo DELFINO

THE TWO-DIMENSIONAL ISING MODEL IN A MAGNETIC FIELD

F.H.L. ESSLER

APPLICATIONS OF INTEGRABLE MODELS TO QUASI-1D MAGNETS AND MOTT INSULATORS

Thierry GIAMARCHI

TRANSPORT IN QUASI-ONE-DIMENSIONAL SYSTEMS

Leonid GLAZMAN

THEORY OF COULOMB BLOCKADE AND KONDO EFFECT IN QUANTUM DOTS

Alexander GOGOLIN

SINGLE-WALL CARBON NANOTUBES

Ilya GRUZBERG

LOCALIZATION IN SUPERCONDUCTORS: SURPRIZES AND EXACT RESULTS

Stephan HAAS

ORDER BY DISORDER FROM IMPURITIES IN QUANTUM SPIN LIQUIDS

Andreas HONECKER

PLATEAUS IN MAGNETIZATION CURVES OF 1D QUANTUM ANTIFERROMAGNETS

Dmitri KHVESHCHENKO

INTERACTING RANDOM DIRAC FERMIONS IN SUPERCONDUCTING CUPRATES

Vladimir KRAVTSOV

ENERGY LEVEL STATISTICS IN MESOSCOPIC SYSTEMS AND 1D CORRELATED FERMIONS

Philippe LECHEMINANT

SELF DUAL SINE GORDON MODELS AND CHIRAL SPIN LIQUIDS

A. LUDWIG

DISORDER AND NETWORK MODELS

Sergei LUKYANOV

LEADING ASYMPTOTICS OF FERMION CORRELATION FUNCTIONS IN INTEGRABLE QFTs

Pieralberto MARCHETTI

THE CHERN-SIMONS APPROACH TO THE t - J MODEL:

BASIC IDEAS AND 1D RESULTS

Dmitrii MASLOV

1D PHYSICS IN STRONG MAGNETIC FIELDS

Giuseppe MUSSARDO

FORM FACTORS AND CORRELATION FUNCTIONS IN LOW-DIMENSIONAL SYSTEMS

Stephen NAGLER

NEUTRON SCATTERING AND LOW DIMENSIONAL ANTIFERROMAGNETS

Alexander NERSESYAN

BOSONIZATION AND TWO-DIMENSIONAL ISING MODEL

Leo RADZIHOVSKY

INTERLAYER PHASE COHERENCE AND TUNNELING IN BILAYER QUANTUM HALL FERROMAGNETS

Hubert SALEUR

EXACT DETERMINATION OF TRANSPORT PROPERTIES THROUGH QUANTUM DOTS

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Alan TENNANT
EXPERIMENTAL REALIZATION OF A 2D FRACTIONAL QUANTUM SPIN LIQUID

Alexei TSVELIK
NON-ABELIAN BOSONIZATION AND THEORIES OF DISORDER

Victor YAKOVENKO
ELECTRON EDGE STATES IN QUASI-ONE-DIMENSIONAL CONDUCTORS

Andrey ZHELUDEV
DYNAMICS OF HALDANE SPIN CHAINS IN STRONG UNIFORM AND STAGGERED FIELDS

The School is open to scientists from all countries that are members of the United Nations, UNESCO or IAEA. Although one of the main purposes of the ICTP is to help researchers from developing nations, graduate students and post-doctoral scientists from developed countries will also be welcome to attend. As the School will be conducted in English, participants must have a very good working knowledge of that language

As a rule, travel and subsistence expenses of the participants are borne by the home institution. However, limited funds are available for participants from developing countries to be selected by the Organizers. Such financial support is available only to those who attend the entire activity. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fares from their home country. Scientists from developed countries are welcome to join on their own funds.

There is no registration fee for attending the School. The closing date for requesting participation in the School is 31 MARCH 2001.

Candidates should complete and sign the "Request for Participation" form to be found at the back of the Bulletin (also obtainable via e-mail: smr1320@ictp.trieste.it, using as subject "get announcement", or via WWW Server: <http://www.ictp.trieste.it/>), and send it to:

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