



CONFERENCE ON COLD MATERIALS, HOT NUCLEI AND BLACK HOLES: APPLIED GAUGE/GRAVITY DUALITY

15 - 26 August 2011

Miramare, Trieste, Italy

TOPICS

- Gauge/gravity correspondence
- Black holes
- Quantum critical phenomena
- Strongly coupled systems at finite density

The AdS/CFT correspondence, as originally formulated in string theory, relates the dynamics of quantum gravity in universes with negative cosmological constant with the dynamics of specific strongly coupled field theories. Over the past few years it has become apparent that this gauge/gravity correspondence is a powerful tool for unearthing universal features of large classes of strongly coupled dynamical systems. The basic technique is to relate the physics of strongly coupled thermal field theories to the physics of black holes in AdS space, shedding light on both topics. Techniques originating from this correspondence have elucidated the physics of:

(a) the quark-gluon plasma, (b) cold fermionic systems, (c) diverse phenomena in condensed matter physics ranging from superconductivity, non-Fermi liquid behaviour, etc.

The conference aims at bringing together experts who have pioneered this exciting area of research, with an aim to foster discussions and collaborations.

PARTICIPATION

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the School. As it will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure full or, at least, partial support for their fare. However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website:
http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a10162

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

ACTIVITY SECRETARIAT
Telephone: +39-040-2240555
Telefax: +39-040-224163

E-mail: smr2258@ictp.it

ICTP Home Page: <http://www.ictp.it/>

DIRECTORS

Vijay Balasubramanian

(University of Pennsylvania,
Philadelphia, USA)

Jan de Boer

(University of Amsterdam,
Netherlands)

Veronika Hubeny

(Durham University, UK)

Mukund Rangamani

(Durham University, UK)

LOCAL ORGANIZER

Kumar S. Narain

(ICTP, Trieste, Italy)

LECTURERS

*To be announced. Please refer
to the conference webpage.*

DEADLINE

for requesting participation

30 April 2011