

ROUND TABLE 4 ITALY-RUSSIA@DUBNA

BLACK HOLES IN MATHEMATICS AND PHYSICS

Dubna, December 15 – 18, 2011

PROGRAMME

December 16, Friday

08:00 - 09:00 Registration (International Conference Hall)

09:00 - 09:30 OPENING. WELCOME.

Victor Matveev (Director of the Joint Institute for Nuclear Research)

Pietro Fré (Scientific Counselor of the Italian Embassy in the Russian Federation)

Session: BLACK HOLES and SUPERGRAVITY

Chair: V. Kadyshevsky

09:30 - 10:30 Sergio Ferrara (CERN Theoretical Division & UCLA)

Black Holes in Supergravity

10:30 - 11:20 Antoine Van Proeyen (Katholieke Universitet Leuven)

D = 6 Supergravity with R^2 terms

11:20 - 11:40 COFFEE BREAK

Session: BLACK HOLES, PLASMA and ASTROPHYSICS

Chair: D. Shirkov

11:40 - 12:30 Bruno Coppi (MIT)

Coherent Field and Plasma Structures Associated with Black Holes. Relevant Collective Modes

12:30 - 13:15 Anatoly Cherepaschuk (Sternberg Astronomical Institute, MSU)

Black Holes in X-ray Binary Systems

13:15 - 14:15 LUNCH BREAK

Session: BLACK HOLES, PLASMA and ASTROPHYSICS

Chair: V. Voronov

- 14:15 - 15:00 Mikhail Panasyuk (Skobeltzin Inst. MSU)
"Lomonosov " satellite - the space extreme Universe laboratory
- 15:00 - 15:30 Attilio Ferrari (University of Torino)
Plasma instabilities in astrophysical jets
- 15:30 - 16:00 Vasily Beskin (Lebedev Physical Inst.)
Electrodynamics of black holes
- 16:00 - 16:30 Maurizio Paolillo (University of Naples Federico II)
Supermassive Black Holes in Wide-Field surveys
- 16:30 - 16:45 COFFEE BREAK

Session: BLACK HOLES and SUPERGRAVITY

Chair: A. Filippov

- 16:45 - 17:30 Anna Ceresole (INFN sezione di Torino)
Black hole flow equations and duality
- 17:30 - 18:15 Pietro Fre (University of Torino)
Black Holes and Nilpotent Orbits
- 18:15 - 18:40 General discussion
- 19:00 CONCERT IN THE SCIENTIFIC CLUB

By the Russian Jazz Band: **Blues from New Orleans.**

December 17, Saturday

Session: BLACK HOLES and COSMOLOGY

Chair: B. Coppi

- 09:30 - 10:20 Alexei Starobinsky (Chernogolovka & JINR)
Eternally bouncing universe inside a black hole
- 10:20 - 10:50 Alexander Filippov (BLTP JINR)
On black hole and cosmological solutions in generalized gravity theories with symmetric affine connection
- 10:50 - 11:30 Alexander Dolgov (University of Ferrara)
Some observable effects from primordial black holes
- 11:30 - 12:00 COFFEE BREAK

Session: BLACK HOLES and COSMOLOGY

Chair: A. Ceresole

- 12:00 - 12:30 Mikhail Sazhin (Sternberg Astronomical Institute)
Search for cosmic strings
- 12:30 - 13:00 Alexander Kamenschik (University of Bologna)
Black holes, hyperbolic geometry and dark matter
- 13:00 - 14:00 LUNCH BREAK

Session: BLACK HOLE FORMATION and ACCELERATOR PHYSICS

Chair: A. Dolgov

- 14:00 - 14:30 Irina Aref'eva (Steklov Mathematical Inst. RAS)
Heavy ion collisions and BH production
- 14:30 - 15:00 Oleg Teryaev (BLTP JINR)
How the hadron structure affects BH@LHC?

Session: BLACK HOLES, COSMIC RAYS AND SPACE MISSIONS

Chair: A. Starobinsky

- 15:00 - 15:30 Arkady Galper (MEPhI & FIAN)
From Pamela to Gamma 400
- 15:30 - 16:00 Anatoly Petrukhin (MEPhI)
What we do know about cosmic rays at energies above 10^{15} eV?
- 16:00 - 16:20 Alexander Zakharov (ITEP)
Shadows as a tool to evaluate black hole parameters and the dimension of spacetime
- 16:20 - 16:45 COFFEE BREAK

Session: BLACK HOLE MATHEMATICAL THEORY

Chair: A. Van Proeyen

- 16:45 - 17:15 Igor Volovich (Steklov Mathematical Inst. RAS)
*Black hole information paradox and
Bogoliubov quantum gravity kinetic equations*
- 17:15 - 17:45 Stefano Bellucci (INFN-Laboratori Nazionali di Frascati)
Near-horizon particle dynamics in extremal Kerr black hole
- 17:45 - 18:15 Dmitry Fursaev (Dubna International University & JINR)
Holographic Entanglement Renyi Entropy
- 18:15 - 18:45 Dmitry Shirkov and Plamen Fiziev (BLTP JINR)
*Application of the confluent Heun functions for finding
the electromagnetic quasi-normal modes of black holes*
- 18:45 - 19:15 **GENERAL DISCUSSION AND CONCLUSIVE REMARKS BY**
B. Coppi, S. Ferrara, P. Fré and A. Van Proeyen,
A. Cherepashuk, A. Dolgov, M. Panasyuk and M. Starobinsky
- 19:30 BANQUET IN INTERNATIONAL CONFERENCE HALL