

# **Zimányi 2010 Winter School on Heavy Ion Physics**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## **Kolmogorov-Smirnov test and rapidity fluctuations in heavy ion collisions**

**Presenter:** Dr MELO, Ivan (University of Zilina, Slovakia)

Contribution ID: 2

Type: **not specified**

## **Constraining the symmetry energy of the EoS in relativistic heavy ion reactions**

*Wednesday 1 December 2010 14:45 (30 minutes)*

**Presenter:** Prof. KRASZNAHORKAY, Attila (MTA ATOMKI, Debrecen, Hungary)

**Session Classification:** FAIR, CBM and EoS

Contribution ID: 3

Type: **not specified**

## The QCD phase diagram for small chemical potentials

**Presenter:** ENDRŐDI, Gergely (ELTE University)

Contribution ID: 4

Type: **not specified**

## **A new non-perturbative analytical equation of state for gluon matter**

**Presenter:** Dr GOGOKHIA, Vahtang (MTA KFKI RMKI)

Contribution ID: 5

Type: **not specified**

## **Recent results on the QCD transition temperature and equation of state**

**Presenter:** Prof. KATZ, Sándor (ELTE University)

Contribution ID: 6

Type: **not specified**

## **Propects for heavy-ion physics with the CBM experiment**

*Wednesday 1 December 2010 14:00 (45 minutes)*

This seminar is one of the highlights of the School.

**Presenter:** Prof. FRIESE, Volker (GSI and FAIR, Darmstadt, Germany)

**Session Classification:** FAIR, CBM and EoS

Contribution ID: 7

Type: **not specified**

## **Status of ATLAS, LHCb and LHCf experiments**

*Wednesday 1 December 2010 15:35 (45 minutes)*

**Presenter:** Prof. CSÖRGŐ, Tamás (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Jets at LHC



Contribution ID: 8

Type: **not specified**

## **Chiral Transition and Axial Anomay at Finite Temperature and/or Density**

*Thursday 2 December 2010 09:00 (45 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Prof. KUNIHURO, Teiji (University of Kyoto, Kyoto, Japan)

**Session Classification:** QCD - analytic results

Contribution ID: **10**

Type: **not specified**

## **Underlying events in p+p collisions in ALICE experiment**

**Presenter:** Mr AGÓCS, András (ELTE University, Budapest, Hungary)

Contribution ID: 11

Type: **not specified**

## **Dilepton Production at SIS Energies**

**Presenter:** WOLF, GYURI (MTA KFKI RMKI, BUDAPEST, HUNGARY)

Contribution ID: 12

Type: **not specified**

## **Data-driven estimation of $W$ +jets background for $t\bar{t}$ cross section in the lepton + jet channel at ATLAS**

**Presenter:** RADICS, BÁLINT (UNI. BONN, GERMANY)

Contribution ID: 13

Type: **not specified**

## The next generation of neutron sources

**Presenter:** MEZEI, FERENC (MTA SZFKI, BUDAPEST, HUNGARY)

Contribution ID: 14

Type: **not specified**

## **Current Status and Prospects of Hadron Physics at J-PARC**

*Friday 3 December 2010 09:00 (40 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Prof. SAITO, Naohito (KEK, Kyoto, Japan)

**Session Classification:** J-PARC and instrumentation

Contribution ID: 15

Type: **not specified**

## Closing of the School

*Friday 3 December 2010 12:30 (5 minutes)*

**Presenter:** CSÖRGŐ, TAMÁS (MTA KFKI RMKI, BUDAPEST, HUNGARY)

**Session Classification:** Instrumentation and ALICE heavy ions

Contribution ID: 16

Type: **not specified**

## The QCD equation of state with dynamical quarks

*Thursday 2 December 2010 16:30 (30 minutes)*

**Presenter:** Mr ENDRÓDI, Gergely (ELTE University, Budapest, Hungary)

**Session Classification:** Recent results from lattice QCD



Contribution ID: 17

Type: **not specified**

## QCD Thermodynamics with Wilson Fermions

*Thursday 2 December 2010 17:00 (30 minutes)*

**Presenter:** Mr NÓGRÁDI, Dániel (ELTE University, Budapest, Hungary)

**Session Classification:** Recent results from lattice QCD

Contribution ID: **18**

Type: **not specified**

## **Predictions for entropy production in heavy ion collisions at LHC**

**Presenter:** Prof. LUKÁCS, Béla (MTA KFKI RMKI, Budapest, Hungary)

Contribution ID: **19**

Type: **not specified**

## Recent results on the QCD Phase Diagram

*Thursday 2 December 2010 14:00 (30 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Prof. KATZ, Sándor (ELTE University)

**Session Classification:** QCD: Recent results from the lattice and from RHIC

Contribution ID: **20**

Type: **not specified**

## **Elementary particles on your own**

*Thursday 2 December 2010 14:30 (15 minutes)*

**Presenter:** Prof. CSÖRGŐ, Tamás (Harvard University and MTA KFKI RMKI)

**Session Classification:** QCD: Recent results from the lattice and from RHIC

Contribution ID: 21

Type: **not specified**

## **First Results from the RHIC Beam Energy Scan Program**

*Thursday 2 December 2010 15:00 (50 minutes)*

This highlighted talk is also announced as an Ortway Colloquium at the ELTE University.

**Presenter:** Dr MITCHELL, Jefferey (BNL, Upton, USA)

**Session Classification:** QCD: Recent results from the lattice and from RHIC

Contribution ID: 23

Type: **not specified**

## **Worm Algorithm for a 3-state Potts model with magnetic field and chemical potential**

*Thursday 2 December 2010 11:40 (25 minutes)*

**Presenter:** Ms MERCADO, Ydalia Delgado (Karl-Franzens University, Graz, Austria)

**Session Classification:** Analytic results in QCD 2

Contribution ID: 24

Type: **not specified**

## **Poisson Statistics in the High Temperature QCD Dirac Spectrum**

*Thursday 2 December 2010 12:05 (25 minutes)*

**Presenter:** Mr PITTTLER, Ferenc (PTE, Pécs, Hungary)

**Session Classification:** Analytic results in QCD 2

Contribution ID: 25

Type: **not specified**

## **A TPC at NA61 as centrality detector in p+A collisions**

*Monday 29 November 2010 11:40 (20 minutes)*

**Presenter:** Ms MÁRTON, Krisztina (ELTE University, Budapest, Hungary)

**Session Classification:** Status of HADES, dileptons and NA61



Contribution ID: 26

Type: **not specified**

## **Investigating dense nuclear matter with electromagnetic and rare hadronic probes (HADES)**

*Monday 29 November 2010 11:00 (40 minutes)*

**Presenter:** Mr LORENZ, Manuel (IKF, Frankfurt, Germany)

**Session Classification:** Status of HADES, dileptons and NA61

Contribution ID: 27

Type: **not specified**

## **GRID applications in the ALICE Experiment at CERN LHC**

**Presenter:** Mr NAGY, Máté Ferenc (MTA KFKI RMKI, Budapest, Hungary)

Contribution ID: **28**

Type: **not specified**

## **Dilepton production at relativistic energies**

*Wednesday 1 December 2010 11:00 (30 minutes)*

**Presenter:** Prof. WOLF, György (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Dileptons at SIS / Diffraction at LHC

Contribution ID: 29

Type: **not specified**

## **Extremely dilute, but strongly correlated: Experiments with ultracold fermions**

*Monday 29 November 2010 14:00 (50 minutes)*

This highlighted talk is announced also as a KFKI RMKI Colloquium.

**Presenter:** Dr JOCHIM, Selim (MPI for Nuclear Physics, Heidelberg, Germany)

**Session Classification:** Extreme fluids: ultracold fermions and QGP at RHIC

Contribution ID: **30**

Type: **not specified**

## **From a viscous fluid to particles**

*Monday 29 November 2010 14:50 (40 minutes)*

**Presenter:** Dr MOLNAR, Denes (Purdue University, West Lafayette, USA)

**Session Classification:** Extreme fluids: ultracold fermions and QGP at RHIC

Contribution ID: 31

Type: **not specified**

## **Search for squeezed back-to-back particle-antiparticle correlations in 200 GeV Au+Au collisions in PHENIX**

**Presenter:** Mr NAGY, Márton I. (MTA KFKI RMKI, Budapest, Hungary)

Contribution ID: 32

Type: **not specified**

## **Self-similar solutions for classical heat-conduction mechanisms**

*Monday 29 November 2010 16:00 (30 minutes)*

**Presenter:** Dr BARNA, Imre Ferenc (MTA KFKI AEKI, Budapest, Hungary)

**Session Classification:** Hydrodynamical results and predictions

Contribution ID: 33

Type: **not specified**

## **Spectra, elliptic flow and azimuthally sensitive HBT radii from Buda-Lund model for 200 GeV Au+Au collisions at RHIC**

*Monday 29 November 2010 16:30 (30 minutes)*

**Presenter:** STER, András (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Hydrodynamical results and predictions



Contribution ID: 34

Type: **not specified**

## **Expectations for specific entropy at LHC**

*Monday 29 November 2010 17:00 (30 minutes)*

**Presenter:** Prof. LUKÁCS, Béla (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Hydrodynamical results and predictions

Contribution ID: 35

Type: **not specified**

## **Greetings from the Organizers and Opening the School**

*Monday 29 November 2010 09:00 (5 minutes)*

**Presenter:** CSÖRGŐ, Tamás (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Opening session: Status of RHIC and LHC experiments I.

Contribution ID: **36**

Type: **not specified**

## **Greetings by the Director of MTA KFKI RMKI**

*Monday 29 November 2010 09:05 (5 minutes)*

**Presenter:** Prof. SZŐKEFALVI-NAGY, Zoltán

**Session Classification:** Opening session: Status of RHIC and LHC experiments I.

Contribution ID: 37

Type: **not specified**

## Overview of QCD Results from CMS

*Thursday 2 December 2010 10:15 (35 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Dr SIKLÉR, Ferenc (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** QCD - analytic results

Contribution ID: **38**

Type: **not specified**

## **Status of the TOTEM Experiment at LHC**

*Wednesday 1 December 2010 11:30 (25 minutes)*

**Presenter:** Dr SZIKLAI, Janos (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Dileptons at SIS / Diffraction at LHC

Contribution ID: 39

Type: **not specified**

## **Properties of the perfectly flowing, strongly coupled QGP discovered in Au+Au collisions at RHIC**

*Monday 29 November 2010 09:10 (35 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Prof. CSÖRGŐ, Tamás (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Opening session: Status of RHIC and LHC experiments I.

Contribution ID: 40

Type: **not specified**

## **Three-dimensional pion and kaon source imaging from 200 GeV Au+Au collisions from the STAR experiment**

*Tuesday 30 November 2010 09:00 (40 minutes)*

This is one of the highlighted talks of the School.

**Presenter:** Dr CHUNG, Paul (NPI ASCR, Prague, Czech Republic)

**Session Classification:** Femtoscopy and Hydro at RHIC

Contribution ID: 41

Type: **not specified**

## **Self-similar solution of a telegraph-type equation for heat propagation**

**Presenter:** Dr BARNA, Imre (MTA KFKI AEKI, Budapest, Hungary)



Contribution ID: 42

Type: **not specified**

## **Observables from an exact solution of 1+3 dimensional relativistic hydrodynamics**

*Tuesday 30 November 2010 09:40 (30 minutes)*

**Presenter:** Mr VARGYAS, Márton (ELTE University, Budapest, Hungary)

**Session Classification:** Femtoscopy and Hydro at RHIC

Contribution ID: 43

Type: **not specified**

## **Initial temperature and EoS from photon spectra in Au+Au collisions**

*Tuesday 30 November 2010 10:10 (30 minutes)*

**Presenter:** Mr MÁJER, Imre (ELTE University, Budapest, Hungary)

**Session Classification:** Femtoscopy and Hydro at RHIC

Contribution ID: 44

Type: **not specified**

## **Final L3 results on Bose-Einstein correlations in $e+e-$ annihilations at LEP**

*Tuesday 30 November 2010 11:30 (30 minutes)*

**Presenter:** Dr NOVÁK, Tamás (MTA KFKI RMKI Budapest and KRF Gyöngyös, Hungary)

**Session Classification:** Correlations and femtoscopy

Contribution ID: 45

Type: **not specified**

## **A method of eta' rejection in high-energy Au+Au and p+p collisions**

*Tuesday 30 November 2010 11:00 (30 minutes)*

**Presenter:** Ms KÓFARAGÓ, Mónika (ELTE University, Budapest, Hungary)

**Session Classification:** Correlations and femtoscopy

Contribution ID: 46

Type: **not specified**

## **Temperature evolution for non-constant equation of state in relativistic hydro**

*Tuesday 30 November 2010 14:00 (30 minutes)*

**Presenter:** Dr CSANÁD, Máté (ELTE University, Budapest, Hungary)

**Session Classification:** Exact solutions of relativistic hydrodynamics I.

Contribution ID: 47

Type: **not specified**

## **Remarks on theory and applications of relativistic dissipative fluid dynamics**

*Tuesday 30 November 2010 15:00 (30 minutes)*

**Presenter:** Dr MOLNÁR, Etele (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Exact solutions of relativistic hydrodynamics I.

Contribution ID: 48

Type: **not specified**

## **On analytic solutions of 1+3d relativistic ideal hydrodynamics (webinar)**

**Presenter:** Dr LIN, Shu (State University of New York at Stony Brook, NY, USA)

Contribution ID: 49

Type: **not specified**

## **New analytic hydrodynamic solutions from embedding-reduction (webinar)**

**Presenter:** Dr LIAO, Jinfeng (LBL, Berkeley, USA)



Contribution ID: 50

Type: **not specified**

## **Pi0 production in collisions at $\sqrt{s(NN)} = 39$ GeV**

*Tuesday 30 November 2010 16:20 (30 minutes)*

**Presenter:** Dr NOVITZKY, Norbert (University of Jyvaskyla, Jyvaskyla, Finland)

**Session Classification:** New developments

Contribution ID: 51

Type: **not specified**

## Greetings from ELTE

**Presenter:** Prof. PATKÓS, András (Dept Atomic Physics, ELTE University)

Contribution ID: 52

Type: **not specified**

## **Non-Extensive Black Hole Thermodynamics: Estimate for Power-Law Particle Spectra**

*Wednesday 1 December 2010 09:00 (45 minutes)*

This talk is one of the highlights of the School.

**Presenter:** BIRÓ, Tamás S. (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Non-extensive thermodynamics

Contribution ID: 53

Type: **not specified**

## Particles originating from quark and gluon jets

**Presenter:** Ms POCHYBOVA, Sona (MTA KFKI RMKI, Budapest, Hungary)

Contribution ID: 54

Type: **not specified**

## **Tsallis distribution in e+e-, pp and AuAu collisions**

*Wednesday 1 December 2010 10:00 (30 minutes)*

**Presenter:** ÜRMÖSSY, Károly (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Non-extensive thermodynamics

Contribution ID: 55

Type: **not specified**

## School Reception

*Monday 29 November 2010 19:00 (2h 30m)*

Contribution ID: 56

Type: **not specified**

## **Hydrodynamic Predictions for Pb+Pb collisions at 2.76 TeV per nucleon**

*Monday 29 November 2010 17:30 (30 minutes)*

**Presenter:** Prof. TOMASIK, Boris (Univerzita Mateja Bela, Banska Bystrica, Slovakia)

**Session Classification:** Hydrodynamical results and predictions

Contribution ID: 57

Type: **not specified**

## **Detailing the indirect observation of the in-medium eta' mass drop at RHIC**

*Thursday 2 December 2010 09:45 (30 minutes)*

**Presenter:** Mr VÉRTESI, Róbert (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** QCD - analytic results



Contribution ID: 58

Type: **not specified**

## Latest Results from the Heavy Ion Run in ALICE

*Friday 3 December 2010 12:05 (25 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Prof. LÉVAI, Péter (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Instrumentation and ALICE heavy ions

Contribution ID: 59

Type: **not specified**

## **State-of-the-art gaseous detectors**

*Friday 3 December 2010 09:40 (30 minutes)*

**Presenter:** VARGA, Dezso (Res. Inst. Particle & Nucl. Phys. - Hungarian Academy of Science)

**Session Classification:** J-PARC and instrumentation

Contribution ID: **60**

Type: **not specified**

## **MWPC option for HPTD: the Close Cathode Chamber**

*Friday 3 December 2010 10:10 (15 minutes)*

**Presenter:** Mr KISS, Gábor (ELTE University, Budapest, Hungary)

**Session Classification:** J-PARC and instrumentation

Contribution ID: 61

Type: **not specified**

## **Higt pT upgrade of ALICE: the VHMPID, and its present state**

*Friday 3 December 2010 10:25 (15 minutes)*

**Presenter:** Dr HAMAR, Gergő (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** J-PARC and instrumentation

Contribution ID: **62**

Type: **not specified**

## **Muon tomography experiments in the Janossy pit**

*Friday 3 December 2010 10:40 (20 minutes)*

**Presenter:** Mr OLÁH, László (ELTE University)

**Session Classification:** J-PARC and instrumentation

Contribution ID: 63

Type: **not specified**

## **About the digital electronics of the High pT Trigger Detector**

*Friday 3 December 2010 11:35 (15 minutes)*

**Presenter:** Mr LIPUSZ, Csaba (MTA KFKI RMK)

**Session Classification:** Instrumentation and ALICE heavy ions

Contribution ID: 65

Type: **not specified**

## **The influence of the weak interactions on the inclusive hadron spectra at LHC energies**

*Friday 3 December 2010 11:50 (15 minutes)*

**Presenter:** Mr PÁSZTOR, Attila (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Instrumentation and ALICE heavy ions

Contribution ID: 66

Type: **not specified**

## **Strangeness results + first look at Pb-Pb collisions at CMS**

*Thursday 2 December 2010 11:10 (30 minutes)*

**Presenter:** Mr KRAJCZÁR, Krisztián (MTA KFKI RMKI)

**Session Classification:** Analytic results in QCD 2



Contribution ID: 67

Type: **not specified**

## **Two-particle correlation results from the CMS experiment (webinar)**

*Monday 29 November 2010 09:45 (35 minutes)*

This talk is one of the highlights of the School.

**Presenter:** Dr VERES, Gábor (CERN and ELTE University)

**Session Classification:** Opening session: Status of RHIC and LHC experiments I.

Contribution ID: **68**

Type: **not specified**

## **Rapidity correlations of protons from fragmented fireball**

*Tuesday 30 November 2010 12:00 (30 minutes)*

**Presenter:** Mr SCHULC, Martin (CTU Prague, FNSPE, Prague, Czech Republic)

**Session Classification:** Correlations and femtoscopy

Contribution ID: 69

Type: **not specified**

## **Kinetic theory and hydrodynamics: how are they related?**

*Tuesday 30 November 2010 14:30 (30 minutes)*

**Presenter:** Dr VÁN, Péter (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Exact solutions of relativistic hydrodynamics I.

Contribution ID: 70

Type: **not specified**

## **Gibbs paradox and the finite lifetime hadron resonance gas**

*Tuesday 30 November 2010 15:50 (30 minutes)*

This is one of the highlighted talks of the School.

**Presenter:** Dr JAKOVÁC, Antal (BME, Budapest, Hungary)

**Session Classification:** New developments

Contribution ID: 71

Type: **not specified**

## Jet quenching in p+p collisions at LHC

*Tuesday 30 November 2010 16:50 (30 minutes)*

**Presenter:** Prof. VESZTERGOMBI, G. (KFKI Research Institute)

**Session Classification:** New developments

Contribution ID: 72

Type: **not specified**

## **Analysis of diffractive pion-proton scattering data (webinar)**

*Wednesday 1 December 2010 11:55 (25 minutes)*

**Presenter:** Mr NEMES, Frigyes (ELTE University)

**Session Classification:** Dileptons at SIS / Diffraction at LHC

Contribution ID: 73

Type: **not specified**

## **Jets and underlying events in p+p collisions at LHC energies**

*Wednesday 1 December 2010 16:20 (20 minutes)*

**Presenter:** Mr AGÓCS, András (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Jets at LHC

Contribution ID: 74

Type: **not specified**

## **Studies of the Tracker Material in the CMS Tracker System**

*Monday 29 November 2010 10:20 (20 minutes)*

**Presenter:** Ms ZSIGMOND, Anna Júlia (ELTE University, Budapest, Hungary)

**Session Classification:** Opening session: Status of RHIC and LHC experiments I.



Contribution ID: 76

Type: **not specified**

## **Trigger studies for the VHMPID detector**

Contribution ID: 78

Type: **not specified**

## **GPU developments for ALICE data analysis**

Contribution ID: 79

Type: **not specified**

## Particles originating from quark and gluon jets

*Wednesday 1 December 2010 16:40 (20 minutes)*

**Presenter:** Ms SONA, Pochybova (MTA KFKI RMKI, Budapest, Hungary)

**Session Classification:** Jets at LHC

Contribution ID: **80**

Type: **not specified**

## **Trigger studies for the VHMPID detector**

*Friday 3 December 2010 11:20 (15 minutes)*

**Presenter:** Mr BOLDIZSÁR, László (MTA KFKI RMKI)

**Session Classification:** Instrumentation and ALICE heavy ions

Contribution ID: **81**

Type: **not specified**

## **Greetings from the ELTE University**

*Thursday 2 December 2010 08:55 (5 minutes)*

**Presenter:** Prof. FREI, Zsolt (Chair, Department of Atomic Physics)

**Session Classification:** QCD - analytic results