

Zimányi School 2018

3 Dec 2018, 09:00 → 7 Dec 2018, 18:00 Europe/Budapest

Bldg 3, Council room (Wigner Research Center for Physics)

Description

ZIMÁNYI SCHOOL'18



Janos Kass: Cantata Profana

18. ZIMÁNYI SCHOOL

WINTER WORKSHOP ON HEAVY ION PHYSICS

Dec. 3. - Dec. 7.,
Budapest, Hungary



József Zimányi (1931 - 2006)

The Zimányi School aims to summarize the developments of 2018 in high energy heavy ion physics, with particular attention to the new data emerging from the **Relativistic Heavy Ion Collider (RHIC)** and the **Large Hadron Collider (LHC)**, **SPS** and **J-PARC**. We will discuss results from other high energy nuclear and particle physics facilities of the world, most importantly lower energy colliders, exploring the nuclear phase diagram (with special attention to **FAIR** and **NICA**). Another important point of the School is to discuss important new results in hydrodynamics, flow and femtoscopy. One of the main aims of the School is to encourage interaction between the theoretical and experimental community. A slightly overlapping list of topics of the School includes (in alphabetical order):

- Effective QCD theory/model approaches
- Elastic scattering and diffraction (experiment+theory)
- Femtoscopy (experiment+theory)
- Flow and hydrodynamics (experiment+theory)
- Gluon saturation and electron-ion collider (experiment+theory)
- Heavy flavor and quarkonia (experiment+theory)
- Intermediate energies (FAIR, J-PARC, nuclear physics)
- Jets and high pT probes (experiment+theory)
- Magnetic field in heavy ion collisions (experiment+theory)
- Photons and dileptons (experiment+theory)
- QCD at non-zero temperature and density
- Search for the QCD critical point (experiment+theory)
- Strongly coupled gauge theories (beyond SM, AdS/CFT)
- Vorticity and polarization in heavy ion physics (experiment+theory)

MONDAY, 3 DECEMBER

09:00 → 10:50 **Thermodynamics and photons**

Bldg 3, Council room

09:00 **Opening and welcome at Wigner** ⌚ 5m

Speaker: Peter Levai (Hungarian Academy of Sciences (HU))

09:05 **A guide to lattice QCD thermodynamics** ⌚ 40m

Speaker: Szabolcs Borsanyi (University of Wuppertal)

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09:45 **Highlights from BNL and RHIC 2018** ⌚ 40m

Speaker: Michael Tannenbaum (Brookhaven National Laboratory (US))

 Tannenbaum-Ziman...

10:25

Direct photons in heavy ion collisions: what we learned and what we didn't learn (yet) ⌚ 25m**Speaker:** Gabor David (Brookhaven National Laboratory)
 gdavid_zimanyi201...

 gdavid_zimanyi201...
10:50 → 11:10 **Coffee break** ⌚ 20m

📍 Bldg 3, Council room

11:10 → 12:40 **Jets and high pT probes**

📍 Bldg 3, Council room

11:10

Jets and high pT probes in heavy-ion collisions ⌚ 25m**Speaker:** Miguel angel ESCOBEDO ESPINOSA (University of Jyväskylä)
 zy_escobedo.pdf

11:35

Surprising similarities between high pt spectra in PbPb and pp collisions at high multiplicities ⌚ 25m**Speaker:** Guy Paic (Universidad Nacional Autonoma (MX))
 zimanyi_2018.pptx

12:00

Jet structure studies in small systems ⌚ 15m**Speaker:** Zoltán Varga
 ZoltanVarga_Ziman...

12:15

High-pT hadron+jet correlations in ALICE ⌚ 25m**Speaker:** Filip Krizek (Acad. of Sciences of the Czech Rep. (CZ))
 Krizek_Zimanyi2018...
12:40 → 14:00 **Lunch break** ⌚ 1h 20m

📍 Bldg 3, Council room

14:00 → 15:40 **Jets and QCD matter**

📍 Bldg 3, Council room

14:00

Physics of small systems using underlying event observables ⌚ 20m**Speaker:** Antonio Ortiz Velasquez (Universidad Nacional Autonoma (MX))
 aortiz_ZIMANY.pdf

14:20

Spectra and flow of light nuclei in relativistic heavy ion collisions at RHIC and the LHC ⌚ 20m**Speaker:** Lilin Zhu
 Zhulilin_Zimayi2018...

14:40

Low pT direct photons in heavy ion collisions ⌚ 15m**Speaker:** Mr Zhandong Sun (University of Debrecen)
 LowTPhton_ziman...

14:55

Study of angular correlations in Monte Carlo Simulations ⌚ 15m**Speaker:** Balazs Endre Szigeti (Hungarian Academy of Sciences (HU))
 Zimanyi2018_sziget...

15:10

Estimating the variation of neutron star observables by dense nuclear matter properties ⌚ 15m**Speaker:** Péter Pósfay (Wigner Research Centre for Physics)
 Peter_Posfay_zima...

15:25

Neutron star properties from the extended linear sigma model ⌚ 15m**Speaker:** Mr János Takátsy (Wigner RCP, Budapest, Hungary) Takatsy_Janos_Zim...

15:40

→ 16:10 **Coffee break** ⌚ 30m

📍 Bldg 3, Council room

16:10

→ 18:10 **Flow**

📍 Bldg 3, Council room

16:10

Flow in heavy-ion collisions ⌚ 25m**Speaker:** Piotr Bozek (AGH University of Science and Technology) flowbudapeszt.pdf

16:35

Anisotropic flow studies at the LHC ⌚ 25m**Speakers:** Panos Christakoglou (Nikhef National Institute for subatomic physics (NL)), Panos Christakoglou (Nikhef National Institute for subatomic physics (NL)) Christakoglou.Zima...

17:00

Measurement of non-linear flow modes for identified charged particles with ALICE ⌚ 25m**Speaker:** Naghmeh Mohammadi (CERN) nonlinearflow_zima...

17:25

Simulation study of effects induced by final granularity of detector in particle flow deduced from experimental data in relativistic heavy ion collisions ⌚ 15m**Speaker:** Alexandr Prozorov Prozorov_Zimanyi.p...

17:40

Do we need viscosity to suppress v_2 ⌚ 15m**Speaker:** Ádám Takács (Wigner Research Centre for Physics) Takacs_Zimanyi_2...

17:55

Analytical solutions of ideal hydrodynamics and viscous hydrodynamics with longitudinal accelerating flow ⌚ 15m**Speaker:** Zefang Jiang (CCNU) JiangZF-ZIMANYI-V... Pseudo-rapidity dist...

TUESDAY, 4 DECEMBER

09:00

→ 10:35 **Femtoscopy**

📍 Bldg 3, Council room

09:00

Averaging and the shape of the correlation function ⌚ 25m**Speaker:** Boris Tomasik (Univerzita Mateja Bela (SK)) tomasik_Zimanyi20...

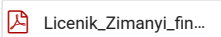
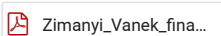
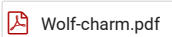
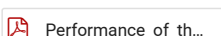
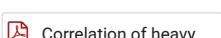
09:25

Bose-Einstein correlations in pp and pPb collisions at LHCb ⌚ 20m**Speaker:** Bartosz Piotr Malecki (Polish Academy of Sciences (PL)) BartoszMalecki_Zi...

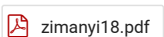
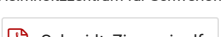
09:45

Lévy HBT in PHENIX ⌚ 20m**Speaker:** Dániel Kincses (Eötvös Loránd University) kincsesd_zimanyi20...

10:05	Three-dimensional Levy HBT at the PHENIX experiment ⌚ 15m Speaker: Bálint Kurgyis  kurgyis_zimanyi_20...	
10:20	Lévy HBT at NA61/SHINE ⌚ 15m Speaker: Mr Barnabas Porfy (Eötvös Loránd University)  bporfy_ZIM18_HBT...	
10:35	→ 11:05 Coffee break ⌚ 30m	📍 Bldg 3, Council room
11:05	→ 12:25 Femtoscopy and chiral symmetry	📍 Bldg 3, Council room
11:05	A new generation of hadron-hadron interaction measurements with ALICE ⌚ 25m Speakers: Valentina Mantovani Sarti (Technische Universitaet Muenchen (DE)), Valentina Mantovani Sarti (Technical University of Munich (TUM)), Valentina Mantovani Sarti (University of Turin), Valentina Mantovani Sarti (INFN Ferrara-University of Ferrara), Valentina Mantovani-Sarti (University of Turin)  BUDAPEST_VMS.pdf	
11:30	Charge kaon femtoscopy in Au+Au collisions at 39 GeV in STAR ⌚ 15m Speakers: Diana Pawłowska, Diana Pawłowska (Warsaw University of Technology)  Zimanyi_Pawlowsk...	
11:45	Dynamics of particle production in Au+Au collisions at 39 GeV in STAR ⌚ 15m Speaker: Mr Paweł Szymański (Warsaw University of Technology)  Zimanyi_Szymanski...	
12:00	T-dependence of the axion mass when the U_A(1) and chiral symmetry breaking are tied ⌚ 25m Speakers: Dubravko Klabucar (University of Zagreb), Dubravko Klabucar (University of Zagreb)  KlabucarZimany201...	
12:25	→ 14:00 Lunch break ⌚ 1h 35m	📍 Bldg 3, Council room
14:00	→ 15:00 Wigner Colloquium	📍 Bldg 3, Council room
14:00	Phases of Quantum Chromodynamics at Extremes ⌚ 1h Speaker: Chihiro Sasaki  budapest.pdf	
15:00	→ 15:30 Coffee break ⌚ 30m	📍 Bldg 3, Council room
15:30	→ 16:40 Heavy flavours I	📍 Bldg 3, Council room
15:30	Overview heavy-flavor experimental results ⌚ 25m Speaker: Silvia Masciocchi (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))  sma_HeavyFlavorEx...	
15:55	Quarkonium Phenomenology from a generalised Gauss Law ⌚ 15m Speakers: David Lafferty (Universität Heidelberg), David Lafferty (University of Heidelberg, Germany)  Lafferty_Zimanyi_1...	
	Production of Open-charmed Mesons in Heavy-Ion Collisions at STAR ⌚ 15m	

16:10	Speakers: Mr Robert Licenik (FNSPE CTU, Prague, Czech Republic), Robert Líčeník (FNSPE CTU in Prague) 	
16:25	Open-charm hadrons production in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV measured by the STAR experiment ⌚ 15m Speaker: Jan Vaněk (Nuclear Physics Institute, Czech Academy of Sciences) 	
16:40	→ 17:10 Coffee break ⌚ 30m	📍 Bldg 3, Council room
17:10	→ 18:35 Heavy flavours II	📍 Bldg 3, Council room
17:10	Charmonium mass in matter ⌚ 25m Speakers: Gyorgy Wolf (Wigner FK), Gyuri Wolf (KFKI RMKI) 	
17:35	Heavy flavour measurements by the ALICE experiment at the LHC ⌚ 25m Speaker: Robert Vertesi (Hungarian Academy of Sciences (HU)) 	
18:00	Performance of the b jet tagging algorithm in ALICE ⌚ 20m Speaker: Artem Isakov (Acad. of Sciences of the Czech Rep. (CZ)) 	
18:20	Correlation of heavy and light flavours in simulations ⌚ 15m Speaker: Ms Eszter Frajna (Budapest University of Technology, Budapest, Hungary) 	
19:15	→ 21:30 Conference dinner ⌚ 2h 15m	📍 Other Institutes

WEDNESDAY, 5 DECEMBER

09:00	→ 10:45 Lattice QCD	📍 7.22 (Eötvös University)
09:00	Welcome at the Eötvös University ⌚ 5m Speaker: Prof. Zsolt Frei	
09:05	Color screening in QCD ⌚ 25m Speakers: Peter Petreczky (BNL), Peter Petreczky (BNL) 	
09:30	Quarkonium Production in the QGP ⌚ 25m Speaker: Alexander Rothkopf (Heidelberg University) 	
09:55	Fluctuations of conserved charges and the QCD phase diagram ⌚ 25m Speakers: Christian Alberto Schmidt (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE)), Christian Joachim Schmidt (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE)), Christian Schmidt (University of Bielefeld) 	

10:20

LQCD thermodynamics at finite chemical potential from analytical continuation ⌚ 25m**Speaker:** Jana Günther (University of Wuppertal) GuentherZimanyi20...

10:45

→ 11:10 **Coffee break** ⌚ 25m

📍 7.22 (Eötvös University)

11:10

→ 12:20 **New physics + small systems**

📍 7.22 (Eötvös University)

11:10

Superweak force and neutrino masses ⌚ 25m**Speakers:** Zoltan Laszlo Trocsanyi (University of Debrecen (HU)), Zoltan Laszlo Trocsanyi (University of Debrecen (HU)) Trocsanyi-Zimanyis...

11:35

Heavy photon and dark matter searches at accelerators ⌚ 25m**Speakers:** Marzio De Napoli (INFN - Catania), Marzio De Napoli (INFN - LNS), Marzio De Napoli De Napoli-Zimanyi_...

12:00

Yields, elliptic and triangular flow in d/p/3He+Au collisions ⌚ 20m**Speaker:** Mate Csanad (Eotvos University, Budapest) csanad_zimanyi18_...

THURSDAY, 6 DECEMBER

09:00

→ 10:40 **Nuclear to intermediate energies**

📍 Bldg 3, Council room

09:00

Dynamics and particle correlations at intermediate energies: status and perspectives ⌚ 25m**Speakers:** Giuseppe Verde, Giuseppe Verde (INFN, Sezione di Catania) Zimanyi2018-Verde-...

09:25

Indirect Methods in Nuclear Astrophysics ⌚ 25m**Speaker:** Silvio Cherubini (INFN - National Institute for Nuclear Physics) Zimanyi-2018-publi...

09:50

Equation of state and symmetry energy studies with heavy-ion collisions ⌚ 25m**Speaker:** Mr Dan Cozma (IFIN-HH, Bucharest, Romania) cozma_zimanyi_dec...

10:15

adronization within Non-Extensive Approaches ⌚ 15m**Speakers:** Keming Shen, Keming/Mick Shen (IOPP), Keming/Mick Shen 20181206Keming.pdf

10:40

→ 11:00 **Coffee break** ⌚ 20m

📍 Bldg 3, Council room

11:00

→ 12:30 **Effective theories and intermediate energies**

📍 Bldg 3, Council room

11:00

Hadron physics at J-PARC ⌚ 25m**Speaker:** Kyoichiro Ozawa (University of Tokyo (JP)) K_Ozawa_06Dec20...

11:25

Xi baryon production in sub-threshold p+A collisions ⌚ 25m**Speakers:** Miklos Zetenyi (RMKI), Miklos Zetenyi (Wigner RCP, Budapest) Zetenyi_Zimanyi201...

11:50

Statistical theory of photon gas in plasma ⌚ 25m**Speakers:** Peter Mati (ELI - ALPS), Peter Mati zim18mp.pdf

12:15

A statistical model for low-energy hadronic cross sections ⌚ 15m**Speaker:** Mr Gábor Balassa ZIMANYI_Balassa.p...**12:30** → 14:00 **Lunch break** ⌚ 1h 30m

📍 Bldg 3, Council room

14:00 → 16:10 **Diffraction and forward physics**

📍 Bldg 3, Council room

14:00

Odderon and substructures of protons from a model-independent Levy imaging of elastic scattering data ⌚ 20m**Speakers:** Tamas Csorgo (Hungarian Academy of Sciences (HU)), Tamas Csorgo (Harvard University) 2018-12-05-Csorgo-... 2018-12-05-Csorgo-...

14:20

Recent results from 2.76 and 13 TeV p+p collisions from the TOTEM experiment at CERN LHC ⌚ 20m**Speakers:** Frigyes Janos Nemes (CERN (also at Wigner RCP Budapest, Hungary)), Frigyes Nemes (MTA KFKI) TOTEM results at 2...

14:40

Study of pp and ppbar scattering at LHC energies using an extended Bialas-Bzdak model ⌚ 15m**Speakers:** Istvan Szanyi, Mr István Szanyi (Uzhgorod National University) szanyi_zimanyi_bud... szanyi_zimanyi_bud...

14:55

Model Independent Femtosopic Levy Imaging of elastic pp collisions ⌚ 15m**Speakers:** Andras Ster (KFKI-RMKI), Andras Ster (Res. Inst. Particle & Nucl. Phys. - Hungarian Academy of Science) ster_zimanyi_2018...

15:10

Study of forward neutrons with the CMS Zero Degree Calorimeter ⌚ 15m**Speaker:** Oliver Suranyi (Eötvös Loránd University) zimanyi_talk_2018...

15:25

Measurement of coherent J/Psi photoproduction in Pb-Pb collisions with ALICE ⌚ 15m**Speaker:** Tomas Herman (Czech Technical University (CZ)) Herman-Zimanyi20...

15:40

Production of vector mesons within the energy-dependent hot-spot model ⌚ 15m**Speakers:** Dagmar Bendova, Dagmar Bendova prez_Bendova_Zima...

15:55

Evidence for light-by-light scattering and searches for axion like particle in ultraperipheral PbPb collisions at 5.02 TeV with CMS ⌚ 15m**Speakers:** Ruchi Chudasama (Bhabha Atomic Research Centre (IN)), Ruchi Chudasama (Bhabha Atomic Research Centre (IN)) zimanyi_school_ruc...**Coffee break** ⌚ 30m

5/6/2019	Zimányi School 2018 (3-7 December 2018) · Indico	
16:10 → 16:40		📍 Bldg 3, Council room
16:40 → 18:50	Phases of QCD	📍 Bldg 3, Council room
16:40	Observation of the critical point in the phase diagram for QCD matter ⌚ 25m Speakers: Roy Alphanso Lacey (Stony brook Universty (US)), Roy Lacey (Stony Brook University)	
17:05	Search for the QCD critical point at RHIC ⌚ 25m Speakers: Adam Bzdak (Brookhaven National Laboratory), Adam Bzdak (AGH University of Science and Technology), Adam Bzdak (Brookhaven National Laboratory) 📄 bzdak_zimanyi.pdf	
17:30	Finite Volume and Lifetime Effects on Secondary-Particle Spectra in Relativistic Collision ⌚ 15m Speaker: Oleg Savchuk 📄 Finite_Volume_Effe...	
17:45	Highlights from NA61/SHINE: proton intermittency analysis ⌚ 15m Speaker: Daria Prokhorova (St Petersburg State University (RU)) 📄 Intermittency_Prokh...	
18:00	Latest HADES results ⌚ 25m Speakers: Szymon Harabasz (TU Darmstadt), Szymon Harabasz 📄 SzymonHarabasz_H...	
18:25	Phase Transition in Interacting Boson System at Finite Temperature ⌚ 15m Speakers: Dmitry Anchishkin (Bogolyubov Institute for Theoretical Physics (ITP)), Dmitry Anchishkin 📄 anchishkin.pdf	
19:00 → 21:00	IAC Meeting	📍 Other Institutes

FRIDAY, 7 DECEMBER

09:00 → 10:30	Vorticity	📍 Bldg 3, Council room
09:00	Open questions on polarization and vorticity ⌚ 30m Speakers: Laszlo Csernai (Department of Physics and Technology), Prof. Laszlo Pal Csernai (University of Bergen), LaszloPal Csernai (UiB) 📄 1-Csernai-Zimanyi_...	
09:30	Hydrodynamics with spin ⌚ 30m Speaker: Wojciech Florkowski (Institute of nuclear Physics, Krakow) 📄 Florkowski-Budapes...	
10:00	Polarized baryon production in exact hydrodynamical solutions ⌚ 15m Speakers: Mr Bálint Boldizsár, Mr Bálint Boldizsár (ELTE) 📄 Balint_Boldizsar_ZI...	
10:15	Initial energy density and lifetime estimation of fireballs ⌚ 15m Speaker: Gábor Kasza (Eötvös Loránd University)	

 GKasza_Zimanyi20...

10:30 → 11:00 **Coffee break** ⌚ 30m

📍 Bldg 3, Council room

11:00 → 12:30 **Classical field theories: hydro and gravity**

📍 Bldg 3, Council room

- | | |
|-------|---|
| 11:00 | Exact solutions of relativistic bulk viscous hydrodynamics ⌚ 25m
Speakers: Marton Nagy (Institut of theoretical physics Eotvos Lorand University (HU)), Marton Nagy (MTA KFKI RMKI)
 zimanyi_visc_2018_... |
| 11:25 | Einstein Telescope ⌚ 25m
Speaker: Dr Mátyás Vasúth
 MV_Zimanyi_18120... |
| 11:50 | Einstein Telescope, further details ⌚ 15m
Speaker: Edit Fenyvesi
 Zimanyi2018_Fenyv... |
| 12:05 | General Relativity experiment with spin polarized light-ion beams? ⌚ 25m
Speaker: Andras Laszlo (Hungarian Academy of Sciences (HU))
 laszlo_zws2018.pdf |

12:30 → 14:00 **Lunch break** ⌚ 1h 30m

📍 Bldg 3, Council room

14:00 → 15:35 **New accelerators, detectors, simulations**

📍 Bldg 3, Council room

- | | |
|-------|---|
| 14:00 | Physics at the EIC ⌚ 25m
Speaker: Astrid Morreale (Centre National de la Recherche Scientifique (FR))
 Morreale-EIC-Physic... |
| 14:25 | Higgs and BSM Studies at the LHC ⌚ 25m
Speakers: Dezso Horvath (KFKI Research Institute for Particle and Nuclear Physics), Dezso Horvath (Wigner RCP, Budapest (HU))
 higgs-susy-zimanyi_... |
| 14:50 | Centrality for light nuclei collisions. What may go wrong. ⌚ 15m
Speaker: Andrey Seryakov (St Petersburg State University (RU))
 Seryakov_centrality... |
| 15:05 | High pT particles from the NA61/SHINE experiment ⌚ 15m
Speakers: Krisztina Marton (Hungarian Academy of Sciences (HU)), Krisztina Marton
 NA61HighpTAnalysi... |
| 15:20 | A novel Monte Carlo event generator for heavy-ion physics: HIJING++ ⌚ 15m
Speaker: Gabor Biro (Hungarian Academy of Sciences (HU))
 GaborBiro_Zimanyi_... |

15:35 → 16:00 **Coffee break** ⌚ 25m

📍 Bldg 3, Council room

16:00 → 17:45 **Detector development**

📍 Bldg 3, Council room

16:00

Another approach to track reconstruction: cluster analysis ⌚ 25m**Speaker:** Ferenc Siklér (Wigner RCP, Budapest (HU)) sikler_zimanyi_2018...

16:25

Proton CT - A novel diagnostic tool in cancer therapy ⌚ 25m**Speaker:** Monika Varga-Kofarago (Hungarian Academy of Sciences (HU)) Varga-Kofarago.pdf

16:50

Characterization of silicon sensors for ALICE ITS upgrade ⌚ 15m**Speaker:** Valentina Raskina (Acad. of Sciences of the Czech Rep. (CZ)) ALPIDE_Zimani_j_fin...

17:05

Multi-Blade, a novel neutron detector ⌚ 15m**Speakers:** Gabor Galgoczi (Hungarian Academy of Sciences (HU)), Gábor Galgóczi (Eötvös Loránd Tudományegyetem) galgoczi_multiblade...

17:20

Luminosity determination at LHC ⌚ 15m**Speaker:** Jan Pucek Pucek_Zimanyi_ver...