

The 2014
Zimányi Medal on Nuclear Theory



awarded to

dr. Tuomas Lappi



Institute for Particle and Nuclear Physics, Wigner Research Centre for Physics, Hungarian Academy of Sciences

Toumas Lappi: Zimanyi Award Winner 2014

Born October 25th 1978 in Suonenjoki, Finland.
Finnish citizen. Married, two children (b. 2007& 2011).
Age : 36 in 2014

Present Position and Affiliation
Academy of Finland Research Fellow
Adjunt Professor
Department of Physics
University of Jyväskylä
Finland

Education

PhD in theoretical physics at the University of Helsinki, January 28th 2005.
hep-ph/0505095, opponent Dr. J.-P. Blaizot,
supervisor prof. K. Kajantie

Thesis “Classical chromodynamics and heavy ion collisions,”



The 2014
Zimányi Medal on Nuclear Theory



dr. Tuomas Lappi

“For his pioneering independent and collaborative work on Color Glass Condensate and the Glasma models of initial conditions in high energy $A+A$ reactions that provide theoretical foundations on which many current bulk viscous hydrodynamic and jet quenching opacity calculations depend.”



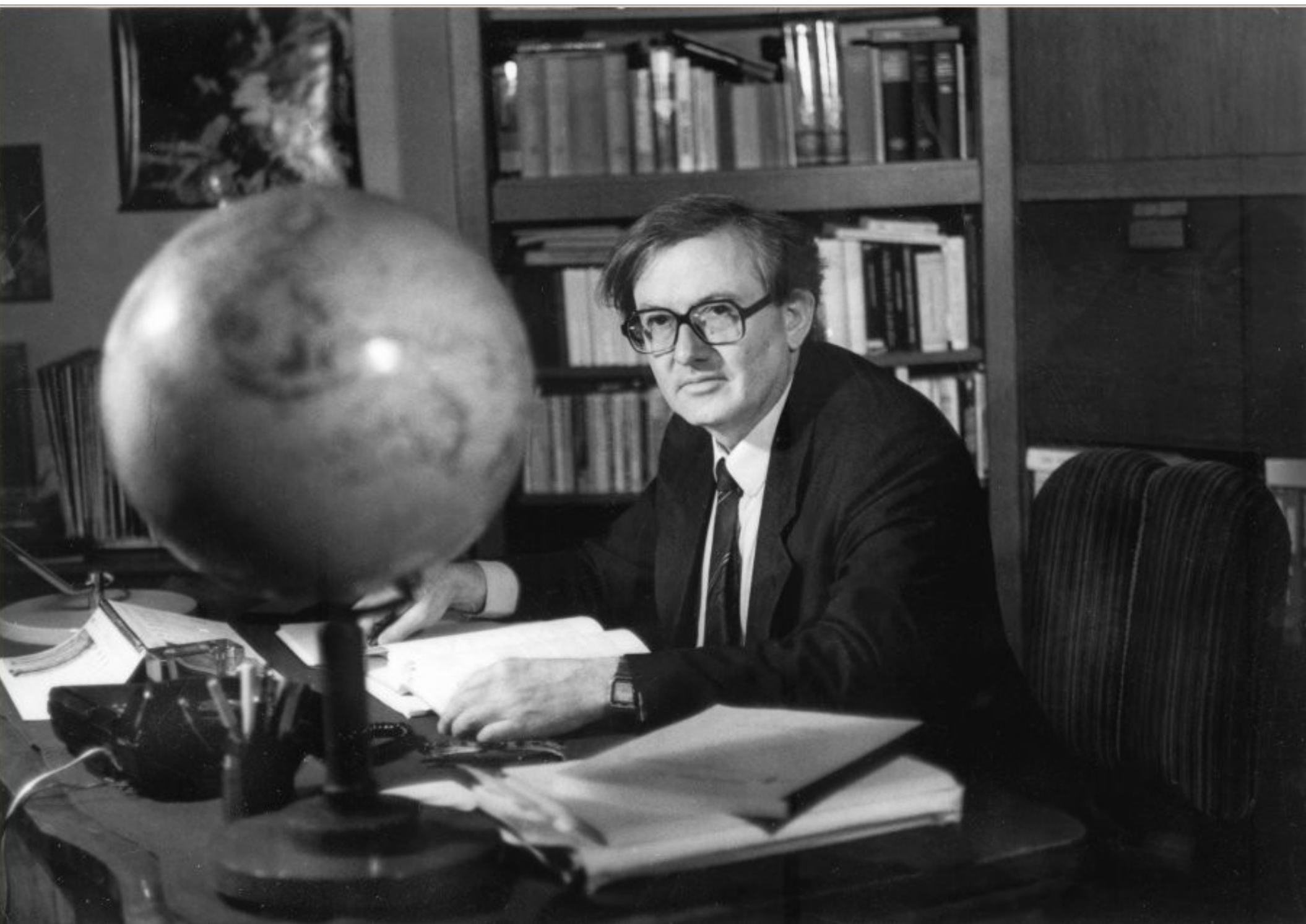
Two thousand dollars

\$ 2000

For **Tuomas Lappi**

Who is the **Winner of Zimányi Medal 2014**





Hungarian Science Academician Professor Jozsef Zimanyi 1931-2006

Work Highlights of Jozsef Zimanyi 1980-1989

On The **Relativistic Hydrodynamical** Description Of Energetic Heavy Ion Reactions.

L.P. Csernai, B. Lukacs, **J. Zimanyi**, (Budapest, RMKI) . 1980.

Published in Lett.Nuovo Cim.27:111-116,1980.

Three-component **fluid dynamics** for the description of energetic heavy-ion reactions.

Laszlo P. Csernai, I. Lovas, J.A. Maruhn, A. Rosenhauer, **J. Zimanyi**, W. Greiner, (Frankfurt U. & Budapest, RMKI) . Phys.Rev.C26:149-161,1982.

Quarkochemistry In Relativistic Heavy Ion Collisions.

T. Biro, **J. Zimanyi**, (Budapest, RMKI) .Phys.Lett.B113:6,1982

Entropy and **hadrochemical** composition in heavy ion collision.

T. Biro, H.W. Barz, B. Lukacs, **J. Zimanyi**, Phys.Rev.C27:2695-2702,1983.

Strange Particle Production In The Hadrochemical Model.

T.S. Biro, B. Lukacs, **J. Zimanyi**, (Budapest, RMKI) , H.W. Barz, (Rossendorf, Forschungszentrum) . Nucl.Phys.A386:617,1982.

Quark Gluon Plasma Formation In Heavy Ion Collisions And Quarkochemistry.

T.s. Biro, (Bohr Inst.) , **J. Zimanyi**, (Budapest, RMKI) . Nucl.Phys.A395:525-538,1983.

Thermodynamical Considerations For The **Rehadronization** Of A Quark - Gluon Plasma.

B. Lukacs, **J. Zimanyi**, (Budapest, RMKI) , N.L. Balazs, (SUNY, Stony Brook) .

Phys.Lett.B183:27,1987.

Work Highlights of Jozsef Zimanyi 1990-2005

Detailed predictions for **two pion correlations** in ultrarelativistic heavy ion collisions.

S. Pratt, (Wisconsin U., Madison) , T. Csorgo, **J. Zimanyi**, Phys.Rev.C42:2646-2652,1990.

ALCOR: A Dynamic model for hadronization.

T.S. Biro, P. Levai, **J. Zimanyi**, Phys.Lett.B347:6-12,1995.

Strange hyperon and anti-hyperon production from **quark and string rope matter**.

P. Csizmadia, , P. Levai, , S.E. Vance, (Columbia U.) , T.S. Biro , M. Gyulassy, , **J. Zimanyi**,
.J.Phys.G25:321-330,1999.

Quark liberation and coalescence at CERN SPS.

J. Zimanyi, T.S. Biro, T. Csorgo, P. Levai, (Budapest, RMKI) .Phys.Lett.B472:243-246,2000.

Evolution of the concept of quark matter: The **lanus* face of the heavy ion collisions.**

J. Zimanyi, (Budapest, RMKI) . Dec 2005. 10pp.

Quark Matter 2005 (QM 2005), Budapest, Hungary, 4-9 Aug 2005. **Roman Diety of beginnings, gates, doorways and bridges**

Nucl.Phys.A774:25-34,2006.

In 1992 he masterminded Hungary's membership of CERN, became a member of the NA49 Collaboration . Arranged support for the Hungarian activities in the ALICE experiment at the LHC and for the foundation of the Budapest LHC GRID station at (RMKI). In parallel, he promoted the activity of the Hungarian PHENIX group at BNL.

CHARTA FOR AWARDING THE ZIMANYI MEDAL

1) Primary criterion for candidacy for a Zimanyi Award is outstanding excellence in the advancement of theory relevant to heavy ion physics by an age less than 40 at the date of the awarding ceremony.

2) The selection process by the Award Committee (AC) must conform with all the principles of equal opportunity regardless of race, gender, religious, political or other considerations aside from the strict maximum age limit set by point 1 by the Zimanyi Foundation Executive Committee (ZFEC) with the intent to recognize and promote the most outstanding young theorists in the field.

3) The AC is charged with judging the quality of candidates and the selection of one theorist selected by majority vote who best advanced the field theoretical physics relevant to the interpretation and prediction of observables in high energy heavy ion physics.

Biro, Tamas, Chair of Zimanyi Foundation Executive Committee

2014 Zimanyi Award Selection Committee:

Levai, Peter (secr.)

Eskola, Kari

Harris, John

Heinz, Ulrich

McLerran, Larry

Redlich, Krzysztof

Schukraft, Jurgen

Stöcker, Horst

Csörgő, Tamás

Gyulassy, Miklós (chair)

Hatsuda, Tetsuo

Kodama, Takeshi

Müller, Berndt

Rischke, Dirk

Sinha, Bikash

Wang, Xin-Nian

Zimanyi Nuclear Theory Medal criteria

Theorist in field of High Energy Heavy Ion Physics

With outstanding accomplishments and future promise
in area of A+A phenomenology related to the
prediction and interpretation of experimental observables

Age < 40

The 2014 Selection Committee proposed 31 outstanding candidates
from around the world working on a wide range of topics including

Hydrodynamics, Transport theory, AdS/CFT, Lattice QCD,
Jet quenching, Color Glass Condensates, Quark recombination, ...

In 2011 a Hydrodynamics theorist, Tetsufumi Hirano, was the winner.

In 2012 a Lattice QCD theorist Peter Petreczky was selected
whose work on QCD Thermodynamics has had especially high impact
on A+A phenomenology

In 2014 a Color Glass Condensate/Glasma theorist , Thoumas Lappi,
was selected for high impact on p+A and A+A initial conditions

Toumas Lappi: Zimanyi Award Winner 2014

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supervisor prof. K. Kajantie

Thesis “Classical chromodynamics and heavy ion collisions,”



Production of gluons in the classical field model for heavy ion collisions
T. Lappi (Helsinki U. & Helsinki Inst. of Phys.). Mar 2003. 9 pp.
Published in Phys.Rev. C67 (2003) 054903

Some features of the glasma
T. Lappi (Brookhaven), L. McLerran (Brookhaven & RIKEN BNL). Feb
2006. 17 pp. Published in Nucl.Phys. A772 (2006) 200-212

Energy density of the glasma
T. Lappi (Brookhaven). Jun 2006. 6 pp.
Published in Phys.Lett. B643 (2006) 11-16

The Ridge in proton-proton collisions at the LHC
Adrian Dumitru, Kevin Dusling, Francois Gelis, Jamal Jalilian-Marian ,
Tuomas Lappi (Jyvaskyla U. & Helsinki Inst. of Phys.), Raju
Venugopalan (Brookhaven). Sep 2010. 6 pp.
Published in Phys.Lett. B697 (2011) 21-25

Long range two-particle rapidity correlations in A+A collisions from high
energy QCD evolution
Kevin Dusling , Francois Gelis , Tuomas Lappi (Jyvaskyla U. &
Helsinki Inst. of Phys.), Raju Venugopalan (Brookhaven). Nov 2009.
26 pp. Published in Nucl.Phys. A836 (2010) 159-182

Most cited regular articles (*citations: INSPIRE, Nov 2013*)

1. T. Lappi and L. McLerran, Nucl. Phys. A **832** (2010) 330, *247 cit.*
2. T. Lappi, Phys. Rev. C **67** (2003) 054903, *188 cit.*
3. K. Dusling, F. Gelis, T. Lappi and R. Venugopalan Nucl. Phys. A **836** (2010) 159-182, *88 cit.*
4. F. Gelis, T. Lappi and R. Venugopalan, Phys. Rev. D **78** (2008) 054019, *81 cit.*
5. A. Dumitru *et al* Phys. Lett. B **697** (2011) 21 *80 cit.*
6. T. Lappi and R. Venugopalan, Phys. Rev. C **74** (2006) 054905, *80 cit.*
7. H. Kowalski, T. Lappi and R. Venugopalan, Phys. Rev. Lett. **100**, (2008) 022303, *72 cit.*
8. F. Gelis, T. Lappi and R. Venugopalan, Int. J. Mod. Phys. E **16** (2007) 2595, *70 cit.*
9. F. Gelis, T. Lappi and R. Venugopalan, Phys. Rev. D **78** (2008) 054020 *66 cit.*
10. T. Lappi, Phys. Lett. B **643** (2006) 11, *61 cit.*

T.~Lappi and H.~Mäntysaari,
%` `Proposal for a running coupling JIMWLK equation, ''
arXiv:1403.7289 [hep-ph].

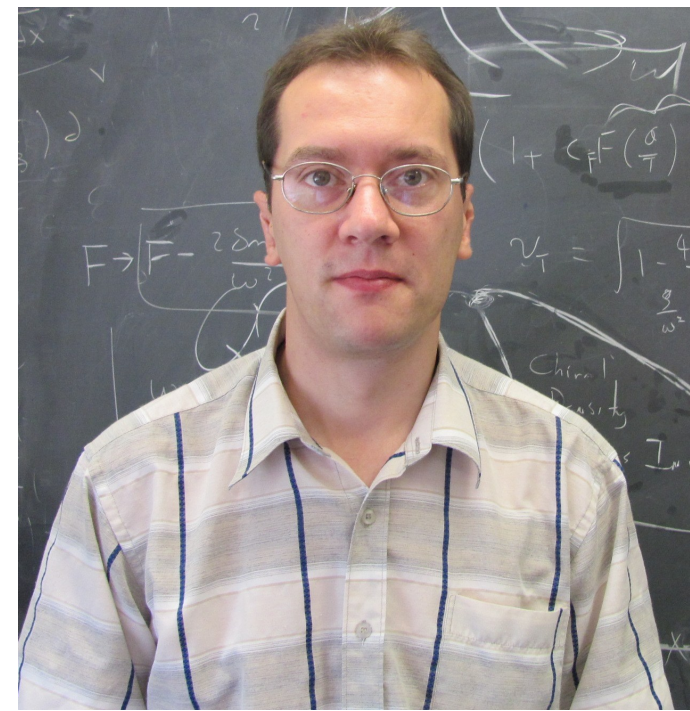
T.~Lappi and H.~Mäntysaari,
%` `Particle production from the Color Glass Condensate:
proton-nucleus collisions in light of the HERA data, ''
arXiv:1403.6944 [hep-ph]

A.~Dumitru, T.~Lappi and Y.~Nara,
%` `Structure of longitudinal chromomagnetic fields in high
energy collisions, ''
arXiv:1401.4124 [hep-ph].

A.~Dumitru, T.~Lappi and L.~McLerran,
%` `Are the angular correlations in pA collisions due to a
Glasmon or Bose condensation?, ''
Nucl.\ Phys.\ A {\bf 922}, 140 (2014)
[arXiv:1310.7136 [hep-ph]].

Zimanyi Award Winner 2012

- Name : Péter Petreczky
- Birth Date/Place : February 17, 1973 in Uzsgorod, Ukraine
- Nationality: Hungarian
- Address : 22 Walnut Drive, Shoreham, NY 11786 USA



Education

- 1999 PhD in Physics, Eötvös University, Budapest, Hungary (summa cum laude)
Research topic : Thermodynamics of non-Abelian fields at finite temperature
Advisor: Prof. András Patkós
- 1996 Diploma in Physics, Kossuth University, Debrecen, Hungary

Employment

- Tenured Scientist, Brookhaven National Laboratory, Upton, NY, USA
(since 12/2010)

Tetsufumi Hirano: Zimanyi Award Winner 2011

Date of birth : September 17, 1972

Place of birth : Kanagawa, Japan

Age : 38 in 2011

Present Position and Aliation

Associate Professor

Department of Physics, Faculty of Science and Technology

Sophia University

Tokyo 102-8554, Japan

Concurrently Associate Professor

Department of Physics

Graduate School of Science

The University of Tokyo

Tokyo 113-0033, Japan

Education

Mar. 2001 Ph. D., Waseda University, Japan

Supervisor: Prof. Ichiro Ohba

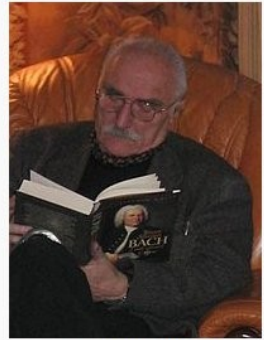
Thesis:

**Hydrodynamical analysis of non-central heavy-ion collisions
at relativistic energies (in Japanese)**



“Alapító” (Founding Father) 1971 Tihany HU

Varga Imre



magyar szobrászművész

Született [Siófok](#)
1923. november 1. (87 éves)



Gergely



József

Magdolna



Zimányi Family