



Excellence in Europe and the Institute of Physics Eötvös Loránd University Budapest, HUNGARY

Jenő KÜRTI

20. March 2010

Bologna system:

mass teaching (Bachelor) – elite teaching (Master, PhD)

Elite teaching needs strong scientific background („research university”)

Students need detailed informations:

- research possibilities**
- quality of the research**
- international cooperations**
- publication possibilities**
- etc**



Some kind of ranking is important, primarily for students.

Aim of ranking:

to help the students and prospective students in deciding where to study

Important step forward in Hungary:

Tendering for the title of „Research university” (2010)

Very good initiative, but 2 serious PROBLEMS

Problem 1:

Inviting applications: 11th January 2010

Application deadline: 29th January 2010

Extremely short termin (!!!)

Announcement of results: 10th February → 10th March → ???

In contrast:

CHE: Centre for Higher Education (Centrum für Hochschulentwicklung)

Long termin

step 1: pre-selection in 2009 by CHE

step 2:

starting: beginning of January 2010

deadline: end of March 2010

Problem 2:

1.3. A teljes munkaidőben foglalkoztatott oktatók, kutatók publikációs tevékenysége tudományágak szerint csoportosítva (max. 23 pont)

Minden publikáció és a rá vonatkozó adat csak egyszer szerepelhet!

Indikátor	Pontszám
Hazai és nemzetközi (idegen nyelvű) publikációinak száma	7
Hazai és külföldi monográfiák száma	
A publikációk nemzetközi és hazai hivatkozásainak száma	7
A publikációk impakt faktora, vagy más módon bizonyítható hatása	
A teljes munkaidőben foglalkoztatott kiemelkedő idézettségű kutatók (a hazai tudományterületi idézettségi rangsor első 25. helyéig bezárólag) neve és idézettsége. Az idézettséget teljes életműre és tudományáganként kell megadni, és hiteles adatbázisban (pl. az MTA Adattárában) dokumentálva kell legyen	9
Az elmúlt 5 év legjobb 10 publikációja és publikációs adatai (tudományáganként)	

FIZIKAI INTÉZET

1.3.1. Publikációk száma

Év	Kar		Publikációk	
	Int./Tsz.*	Tudományág	Hazai publikációk	Nemzetközi (idegen nyelvű) publikációk
2004	Fizikai Intézet	fizika	16	123
2005	Fizikai Intézet	fizika	16	146
2006	Fizikai Intézet	fizika	28	172
2007	Fizikai Intézet	fizika	21	200
2008	Fizikai Intézet	fizika	32	165

* Tanszék csak akkor, ha önálló tanszék

1.3.2. Monográfiák száma (az összes publikáción belül a monográfiák száma értendő)

Év	Kar		Monográfiák	
	Int./Tsz.*	Tudományág	Hazai monográfiák	Nemzetközi (idegen nyelvű) monográfiák
2004	Fizikai Intézet	fizika	1	3
2005	Fizikai Intézet	fizika	1	-
2006	Fizikai Intézet	fizika	2	1
2007	Fizikai Intézet	fizika	4	3
2008	Fizikai Intézet	fizika	1	3

* Tanszék csak akkor, ha önálló tanszék

1.3.3. + 1.3.4. Hivatkozások, impact factor

Év	Kar		Hivatkozások		Impact faktor (az adott év publikációinak folyóiratai)
	Intézet/Tsz.	tud.ag	hazai	nemzetközi	
2004	Fizikai Intézet	fizika		4700	273,21
2005	Fizikai Intézet	fizika		5298	339,886
2006	Fizikai Intézet	fizika		5878	398,243
2007	Fizikai Intézet	fizika		6009	403,107
2008	Fizikai Intézet	fizika		7112	326,69

1.3.5. kiemelkedő idézettségű kutatók

Kar		Név	Idézettség
Int./tsz.	tudományág		
Fizikai Intézet	fizika	Vicssek Tamás	9123
Fizikai Intézet	fizika	Csabai István	7175
Fizikai Intézet	fizika	Fodor Zoltán	3211
Fizikai Intézet	fizika	Kiss Ádám	2547
Fizikai Intézet	fizika	Vörös Gábor	2445
Fizikai Intézet	fizika	Tel Tamás	2317
Fizikai Intézet	fizika	Racz Zoltán	2270
Fizikai Intézet	fizika	Katz Sándor	2100

Az Országos Doktori Tanács honlapján található adatok alapján készült lista szerint.

* Tanszék csak akkor, ha önálló tanszék

1.3.6. Az elmúlt 5 év (= 2004-2008) legjobb 10 publikációja tudományáganként

Kar		Szerző(k)	Publikációs adatok
Int./tsz.	tudományág		
Fizikai Intézet	fizika (asztrofizika)	Tegmark M., Strauss M.A., ... Csabai I. ... et al.	"Cosmological parameters from SDSS and WMAP", Phys.Rev.D 69 , 103501, 2004 (971 hivatkozás)
Fizikai Intézet	fizika (kísérleti nagy- energiás fizika)	K. Adcox, ..., Csanád M., ... A. Kiss et al	"Formation of dense partonic matter in relativistic nucleus-nucleus collisions at RHIC: Experimental evaluation by the PHENIX collaboration." Nucl.Phys.A757, 184-283, 2005 (835 hivatkozás)
Fizikai Intézet	fizika (asztrofizika)	Eisenstein DJ, Zehavi I. ... Csabai I. ... et al.	"Detection of the baryon acoustic peak in the large- scale correlation function of SDSS luminous red galaxies" Astrophysical Journal 633 , 560-574, 2005 (776 hivatkozás)
Fizikai Intézet	fizika (részecskefizika)	Z. Fodor and S.D. Katz	"Critical point of QCD at finite T and mu, lattice results for physical quark masses" JHEP 0404 , 050, 2004 (330 hivatkozás)

In contrast:

CHE: Centre for Higher Education (Centrum für Hochschulentwicklung)

Pre-selection in publication and citation data in step 1

CHE EXCELLENCE RANKING

Many international rankings:

- Academic Ranking of World Universities (Shanghai)
- Higher Education Evaluation and Accreditation Council of Taiwan
- Times Higher Education World University Rankings (British)
- etc. etc.

Usual – vs – **CHE:**

entire university – vs – **academic subjects, departments/institutes**

overall score – vs – **multidimensionality**

league tables – vs – **groupings**

Rank	Score	School Name	Public?	Country	State (If US)	Times Higher Education 08	ARWU	Newsweek	Und
	/300					http://www.timeshighereducation.co.uk/hybrid.asp?typeCode=243&pubCode=1	http://www.arwu.org/rank2008/ARWU2008_A(E N).htm	http://www3.ntu.edu.sg/home/eylu/univ/Newsweek_top100_2006.pdf	
1	300	HARVARD University	N	US	MA	1	1	1	
2	290	University of CAMBRIDGE	Y	UK		3	4	6	
3	288	CALIFORNIA Institute of Technology (Caltech)	N	US	CA	5	6	4	
4	287	YALE University	N	US	CT	2	11	3	
5	282	MASSACHUSETTS Institute of Technology (MIT)	N	US	MA	9	5	7	
5	282	STANFORD University	N	US	CA	17	2	2	
7	281	University of OXFORD	Y	UK		4	10	8	
8	276	COLUMBIA University	N	US	NY	10	7	10	
9	268	PRINCETON University	N	US	NJ	12	8	15	
10	266	University of CHICAGO	N	US	IL	8	9	20	
11	264	University of PENNSYLVANIA	N	US	PA	11	15	13	
12	259	University of California BERKELEY	Y	US	CA	36	3	5	
13	257	CORNELL University	N	US	NY	15	12	19	
14	253	IMPERIAL College London	Y	UK		6	27	17	
14	253	University of MICHIGAN	Y	US	MI	18	21	11	
16	249	University of TOKYO	Y	Japan		19	19	16	
16	249	UNIVERSITY College London (UCL)	Y	UK		7	22	26	
18	248	University of California LOS ANGELES	Y	US	CA	30	13	12	
19	246	JOHNS HOPKINS University	N	US	MD	13	20	24	
20	244	DUKE University	N	US	NC	13	32	14	
21	234	Swiss Federal Institute of Technology ZURICH	Y	Switzerland		24	24	21	
22	226	KYOTO University	Y	Japan		25	23	29	
23	220	University of TORONTO	Y	Canada		41	24	18	
24	208	University of California SAN DIEGO	Y	US	CA	58	14	23	
25	206	University of Washington SEATTLE	Y	US	WA	59	16	22	

Ranking Web of World Universities

January 10

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Top Europe

Universities 1 to 100 of 1

CONTINENT RANK	UNIVERSITY	COUNTRY	WORLD RANK	SIZE	VISIBILITY	POSITION RICH FILES	SCHOL
1	University of Cambridge		27	28	20	61	123
2	University of Oxford		37	48	30	40	137
3	Swiss Federal Institute of Technology ETH Zürich		42	44	59	81	30
4	Norwegian University of Science & Technology		49	111	73	64	22
5	University of Edinburgh		50	89	66	49	69
6	University of Oslo		55	100	79	26	85
7	University College London		57	145	56	39	90
8	University of Helsinki		64	49	100	45	71
9	Universität Wien		71	102	109	63	34

Excellence Group: Physics

The universities of the Excellence Group are shown with some selected results.

Click on the names of the universities to view the complete data!

[Find out more about the ranking](#)

★ =top placement in this indicator

PHYSICS

Overall studysituation [?]							
International doctorates [?]							
International master's students [?]							
International staff [?]							
Preselection: Highly cited authors [?]							
Preselection: Marie Curie projects [?]							
Preselection: Citations [?]							
Preselection: Publications [?]							
University							
U Amsterdam	★	★		★	★	★	★
U Barcelona	★	★	★				
U Birmingham	★	★		★	★		
U Bonn	★	★	★	★			
U Cambridge	★	★	★	★			
U Edinburgh	★	★	★				
U Firenze	★	★	★				

SUBJECT: PHYSICS

EXCELLENCE GROUP

COMPARISON

RESEARCH TEAMS

ExcellenceRanking:

SEARCH TERM

search

ZEIT CAMPUS - AKTUELLE AUSGABE



HOCHSCHULRANKING

So gut sind deutsche Hochschulen

Mehr als 250 analysierte Unis und 30 gerankte Fächer - das Hochschulranking zeigt Gewinner und Verlierer [\[weiter...\]](#)



THEMA

Bologna Prozess

Die ersten Bachelor- und Masterstudenten machen Ihre Abschlüsse - und ziehen eine Bilanz dieser neuen Studiengänge. Ein Schwerpunkt [\[weiter...\]](#)

CHE questionnaire

3. SUBJECT-SPECIFIC DATA

The following sections now refer only to the subject of Physics.

3.1 Academic Staff with a Doctoral Degree

Please indicate the **number and origin of academic staff (faculty) with a doctoral degree** (in full-time equivalents, without visiting academic staff, e.g. professors, assistant professors, post-docs) employed on a contractual basis by your HEI at the department of **Physics** on the specified date. Staff from affiliated research institutes (e.g. CNRS, Max-Planck, etc.) may be counted according to their involvement in teaching master's and PhD students.

Example: Researcher A teaches five hours per week in a Master's Programme. The average teaching obligation of a full-time academic staff member is 20 hours, therefore you may count this as 25%.

	Total number	Female	International
Academic staff (faculty) in October 2009**	82.40	6.50	1.00

Remarks:

Remarks CHE:

* If detailed breakdown by sex and nationality is not possible, please give total number only.

** Or as close as possible to that date.

3.2 Number of Subscribed Journals in the Library

Please indicate the number of **journals from the field of Physics currently available on a subscription basis in your departmental/institutional or university library**. Please indicate how many journals are currently (**cut-off date October 31st 2009**) available, either as print-version or as e-journal.

Currently subscribed journals

43

Remarks:

Available total: 465 (print-version) + many Physics journals electronically (SpringerLink: 125, ScienceDirect: 107)

Remarks CHE:

CHE ExcellenceRanking 2010

Remarks CHE:

3.7 Research Areas / Subfields Covered by the Department

Please indicate which of the **research areas / subfields** are covered in your department and which of them are covered **by full professorships** or chairs.

Research area / subfield	covered by staff of the department	Number of full professorships or chairs
Atomic, Molecular, and Optical Physics	<input checked="" type="checkbox"/>	1
Condensed Matter: Electronic Properties, etc.	<input checked="" type="checkbox"/>	1
Condensed Matter: Structure, etc.	<input checked="" type="checkbox"/>	4
Elementary Particles and Fields	<input checked="" type="checkbox"/>	3
General Physics: Statistical and Quantum Mechanics, Quantum Information, etc.	<input checked="" type="checkbox"/>	4
Gravitation and Astrophysics	<input checked="" type="checkbox"/>	2
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	<input checked="" type="checkbox"/>	1
Nuclear Physics	<input checked="" type="checkbox"/>	1
Plasma and Beam Physics	<input type="checkbox"/>	0
Soft Matter, Biological, and Interdisciplinary Physics	<input checked="" type="checkbox"/>	1
Others: Environmental Physics	<input checked="" type="checkbox"/>	2

Remarks:

Number of professors, including 2 emeritus professors = 20

Remarks CHE:

3.8 List of Research Teams

Please list the names of all **research teams** at the department of Physics at your HEI. A research team is a group of scientists cooperating in an area of specialisation, including on different projects.

3.9 Research Teams	
Please give details about the research team "Astrophysics"	
Research Team	Astrophysics
Research areas / subfields that the team is working on (max. 4)	1. Gravitation and Astrophysics 2. Nuclear Physics 3.
Additional Research areas / subfields	
Object of Research (short description, max. 600 characters)	We are active in one of the frontiers of current cosmology: to study the epoch of structure formation, and how predictions for this epoch can be confronted with observations. A new approach to data analysis for future large data sets consists of a powerful mixture of advanced computer science, statistics, and group theory. We are developing tools and techniques which allow the analysis of such data sets. We also conduct a vigorous research program aiming to study gravitational waves of cosmic origin and to contribute to the development of advanced interferometric gravitational wave detectors.
Currently participating in/ part of an EU Project?	<input checked="" type="checkbox"/>
website of the research team	http://fizika.elte.hu/research/astro-phys
Remarks:	
Remarks CHE:	

3.9 Research Teams	
Please give details about the research team "Biological Physics"	
Research Team	Biological Physics
Research areas / subfields that the team is working on (max. 4)	1. Soft Matter, Biological, and Interdisciplinary Physics 2. Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc. 3.
Additional Research areas / subfields	
Object of Research (short description,	Cellular motion: Mechanics of cell motility and multicellular structure assembly, collective motion of tissue cells. Protein dynamics: protein dynamics with a focus on molecular motors; dynamics of biological membranes; evolutionary theories. Collective behavior: A wide spectrum of phenomena displayed by many interacting complex units, with a stress on collective motion and network

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Our Activities

The research profile is the broadest among the Physics Institutes of Universities in Hungary. It covers almost every field of Physics. The most characteristic activities with strong international cooperation (within EU and outside Europe) are: astrophysics, biological physics, environmental physics, materials physics, nanophysics, particle physics, physics of complex systems and statistical physics.

Click on the menu items in the left column to see more information on these groups.

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Astrophysics

Extragalactic Astrophysics. Over the last decade, a "standard model of cosmology" has emerged, in which the present expansion of the Universe is dominated by the dark energy and dark matter, and cosmic structures formed from the primordial density fluctuations that had a scale-invariant power spectrum. One of the frontiers of current cosmology is to study the epoch of first structure formation, and how predictions for this epoch can be confronted with future observations. Our group has published several papers in the recent past on this field.

Contemporary data analysis tools are inadequate for future large data sets, even with the most powerful supercomputers existing or projected. A new approach to these problems consists of a powerful mixture of advanced computer science, statistics, and group theory. We are developing tools and techniques which allow the analysis of such large data sets on human time-scales using reasonable resources.

The group's website is at: <http://eirsa.elte.hu/>

Members:

Bagoly, Zsolt (associate prof., PhD)

Csabai, István (prof., DSc)

Frei, Zsolt (associate prof., PhD)

Kocsis, Bence (assistant prof., PhD)

Patkós, András (prof, MHA)

Gravitational Wave Astrophysics (participation in LIGO). Theoretical prediction of gravitational wave backgrounds motivated by LIGO/Advanced LIGO. The Eotvos Gravity Research Group (EGRG) conducts a vigorous research program aiming to study gravitational waves of cosmic origin and to contribute to the development of advanced interferometric gravitational wave (GW) detectors.

See the EGRG website for details: <http://egrg.elte.hu/>

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Biological Physics

Cellular motion: Mechanics of cell motility and multicellular structure assembly, collective motion of tissue cells. <http://hal.elte.hu/~vicsek/CELLMOT.html>, <http://angel.elte.hu/cellmotility/>

Members:

Czirók, András (assistant prof., PhD.)

Szabó, Bálint, (assistant prof. PhD)

Vicsek, Tamás (prof., MHAS)

Nanoscale biological physics: protein dynamics with a focus on molecular motors; dynamics of biological membranes; evolutionary theories. <http://angel.elte.hu/~derenyi/>

Member:

Derényi, Imre (associate prof., DSc)

Collective behavior: A wide spectrum of phenomena displayed by many interacting complex units, with a stress on collective motion and network dynamics. <http://hal.elte.hu/~vicsek/>

Members:

Kunal, Bhattacharya (post-doctoral researcher)

Lázár, Anna (post-doctoral researcher)

Vásárhelyi, Gábor (post-doctoral researcher)

Vicsek, Tamás (prof., MHAS)

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Environmental Physics

Environmental flows and climate dynamics. Experimental investigation of stratified and rotating flows, chaotic advection dynamics, statistical analysis of climatological data banks, noise and physical processes underlying long-time climate change.

<http://www.karman.elte.hu>

Recent European collaborations:

European Commissions DG RTD NEST Programme No. 043363 (2007-2009),

European Commissions COST Action MP0806 (2009-2011)

European Commissions RECONCILE-226365-FP7-ENV-2008-1 (2009-2012)

Members:

Horváth, Zsolt (prof., MHA)

János, Imre M. (associate prof., DSc)

Rácz, Zoltán (prof., MHA)

Tél, Tamás (prof., DSc)

Environmental optics. Environmental optics, atmospheric optics, polarization patterns, imaging polarimetry, polarized light pollution, polarization insect traps. <http://arago.elte.hu>

Member:

Horváth, Gábor (associate prof., DSc)

Global energy problems; environmental radiations: Investigation of environmental problems of energy systems, external costs of renewable energies with special emphasis on energy application of water, wind and biomass. — With the help of a larger group of students research is conducted in order to get experimental data for the dosimetry in the GHz range (e.g. mobile phones).

Natural radioactivity: radon mapping, geological source of radon, radon as a tracer

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Materials Physics

Microstructure characterization by X-ray line profile analysis. The dislocation density, Burgers vector population and grain size distribution is determined in crystalline materials deformed under different conditions. http://metal.elte.hu/aft.elte.hu/Kutatas_EN.html

Members:*Groma, István (prof., DSc)**Gubicza, Jenő (associate prof., DSc)**Tichy, Géza (prof., Dsc.)**Ungár, Tamás (prof., DSc.)*

Statistical properties of dislocations. By analytical calculation and large scale computer simulation the collective properties of dislocations (pattern formation, fine size effect, avalanche statistic, plastic instabilities) are studied.

http://metal.elte.hu/aft.elte.hu/Kutatas_EN.html**Members:***Groma, István (prof., DSc)**Györgyi, Géza (associate prof., PhD)**Székely, Ferenc (assistant prof., PhD)*

Deformation properties of alloys and amorphous materials. The mechanical and thermal properties of alloys subject to large deformation (ECAP, HPT), nanocrystalline and amorphous materials are studied by DSC, mechanical testing, nanoindentation, AFM, TEM, SEM and X-ray line profile analysis.

http://metal.elte.hu/aft.elte.hu/Kutatas_EN.html**Members:****FOR SECONDARY
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Nuclear and Particle Physics

Low Dimensional Field Theories. Fields of activity: Conformal Field Theories (CFT) with applications to String theory; Integrable Quantum Field Theoretical models (IQFT); Boundary QFT; Finite size effects. <http://elmfiz.elte.hu/ldqft>

Members:

Bajnok, Zoltán (senior researcher, PhD)

Bántay, Péter (associate prof., DSc)

Palla, László (prof., DSc.)

Takács, Gábor (senior researcher, DSc)

Lattice Field Theory and Functional Methods. Cooperating PC-processor cluster is used for the exact determination of the spectra and phase structure of strong matter. Dyson-Schwinger approach is developed to models of strong matter. <http://bodri.elte.hu>

Members:

Csikor, Ferenc (prof., DSc)

Katz, Sándor (assistant prof., DSc)

Nógrádi, Dániel (post-doctoral researcher, PhD)

Patkós, András (prof., MHAS)

Szép, Zsolt (post-doctoral researcher, PhD)

Experimental Nuclear and High-Energy Physics. Members participate in world's top nuclear and high energy physics experiments at CERN, at BNL RHIC and at NSL. Latest results: discovery of the deconfined phase of strong matter, observation of p-p collisions at the highest ever energy 2,36 TeV. <http://eotvoshep.elte.hu>

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Physics of Quantum Systems

Cold quantum gases. We are interested in the BCS-BEC transition of trapped fermions and study the properties of spinor Bose-Einstein condensates.

Members:

Csordás, András (senior researcher, PhD)
Szépfaussy, Péter (prof., emeritus)

Quantum mechanics. Central objects of the research are: theories of open quantum systems and non-standard extensions of quantum mechanics, both related to current experimental work done elsewhere; quantum information theory.

Members:

Diósi, Lajos (prof., DSc)
Geszti, Tamás (prof., DSc)

Nanophysics. Our theoretical group addresses fundamental physical problems related to nanometer scale physical objects including for example spintronic systems, fullerenes, carbon nanotubes, and graphene.

<http://wigner.elte.hu/koltai/science/>

Members:

Cserti, József (associate prof., PhD)
Csordás, András (senior researcher, PhD)
Dávid, Gyula (senior researcher)
Kaufmann, Zoltán (associate prof., PhD)
Koltai, János (assistant prof., PhD)
Kürti, Jenő (prof., DSc)

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Statistical Physics and Complex Systems

Fields of Activity:

- The application of the methods of statistical physics to problems in quantitative finance, and the theoretical aspects of risk management and of financial regulation.
- High precision active internet measurements, geolocalization, network tomography, network measurement virtual observatory.
- Analysis of molecular biological networks, GeneChip technologies, machine learning.
- Study of complex networks in nature and society in the statistical physics approach, community finding and clustering.

Web: <http://complex.elte.hu/research>

Members:

Csabai, István (prof., DSc)

Farkas, Illés (senior research associate, PhD)

Fekete, Attila (teaching assistant, PhD)

Hága, Péter (assistant professor, PhD)

Kondor, Imre (prof., DSc)

Palla, Gergely (senior research associate, PhD)

Pollner, Péter (senior research associate, PhD)

Stéger, József (teaching assistant, MSc)

Vattay, Gábor (prof., DSc)

Vicsek, Tamás (prof., MHA)

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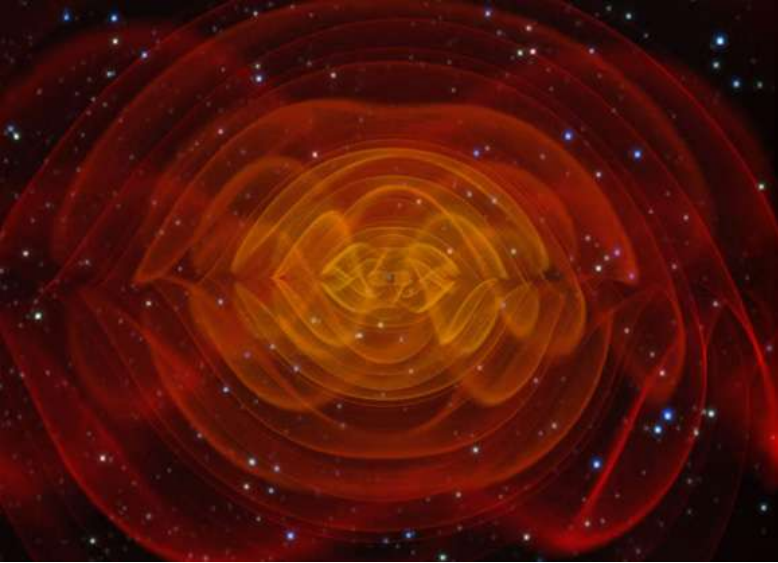
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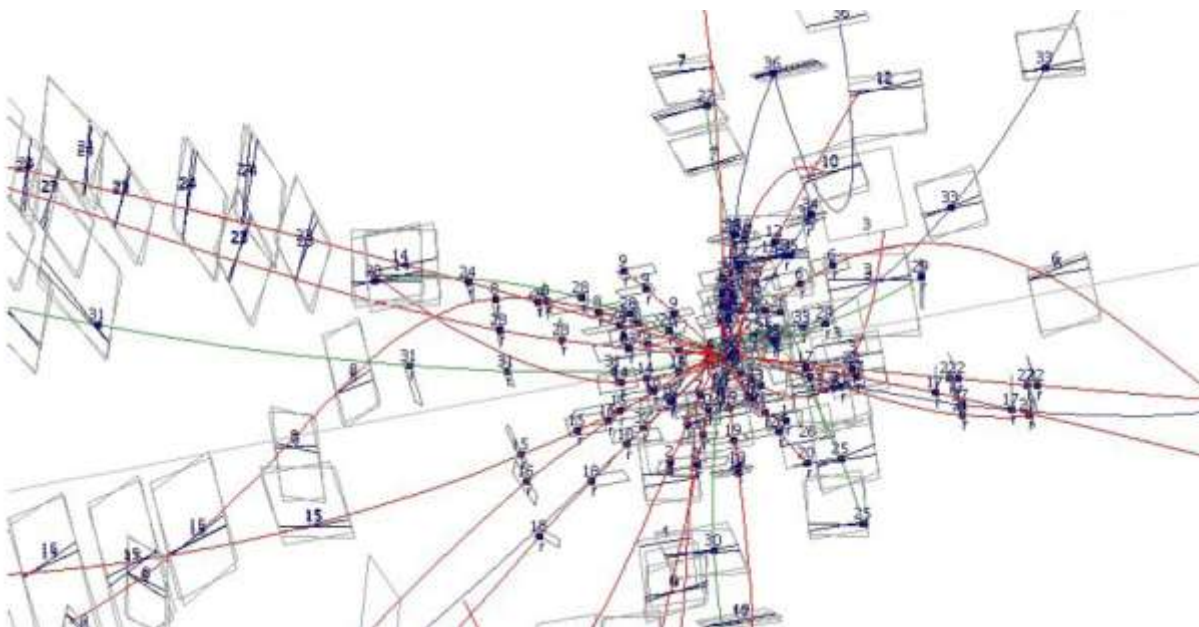
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Laser Interferometer Gravitational Wave Observatory



Sloan Digital Sky Survey



Large Hadron Collider

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NEWS AND VIEWS

Vicsek Wins ERC Advanced Grant

2008.11.18.

Full Member of HAS, "social network physicist" **Tamás Vicsek** can rely on the ERC's 1,248 M Euros over the next 5 years.

He was awarded the grant in the interdisciplinary category.

[Click here](#) for the ERC's press statement.

With his colleagues at the Physics Institute of ELTE University, Tamás Vicsek plans to investigate the hitherto unexplored laws of collective motion with the aid of computer simulation and miniature robots.

Professor Vicsek has published many highly acclaimed papers on such crowd behaviors as the "Mexican wave" phenomenon in sports stadiums, etc.

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ERC: European Research Council - QCDthermo

<http://erc.europa.eu/index.cfm?finaction=page.display&topicID=396>



European Research Council

QCDthermo

Project Acronym: QCDthermo **Project Number:** 208740
Project Title: QCD thermodynamics on the lattice
Principal Investigator: Dr. Sándor Katz
Host Institution: EÖTVÖS LORÁND TUDOMÁNYEGYETEM
Department: Institute of Physics
Budget: € 1,300,000.00
Duration: 60 months

Quantum Chromodynamics (QCD) at finite temperature and non-zero density describes phenomena relevant to the early universe and heavy-ion collisions. The applicability of perturbation theory is limited to large temperatures and densities. We plan to use lattice simulations to study QCD thermodynamics. There are different regularizations of QCD on the lattice. The computationally most effective one is the staggered formulation, while Wilson or chiral fermions are theoretically more established. We have to distinguish studies at vanishing baryon densities from the ones concerning non-zero density. At vanishing densities the order of the QCD transition between the hadronic phase and the quark-gluon plasma was studied using staggered fermions. In the physical, continuum limit the transition was found to be a crossover. The transition temperature has also been determined. These studies should be and will be extended using Wilson and chiral fermions. This way the staggered results can be checked. At non-vanishing densities direct lattice simulations are prohibited by the infamous sign problem. Recently the multi-parameter reweighting method was developed to study moderate

Strong points:

- bibliometrical indicators
- international collaboration
- very broad research profile

Weak points:

- percentage of international and female staff and students
- PR activity, web pages