## 15 Years of the

utheastern European Ne

## In 15 (?) minutes Goran Djordjević

Executive Director of the SEENET-MTP

Faculty of Sciences and Mathematics and

SEENET-MTP Centre

Niš, Serbia

IFIN-HH & University - Bucharest, Romania 23 April, 2018

## Where the things begin?







Oberwölz Stadt Österreich

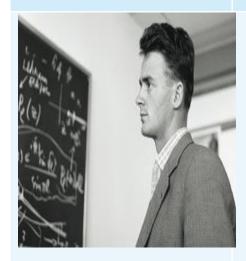
Нишко породилиште/
Spitalul de maternitate

Biergarten Munich

Julius Wess, man

Дудук









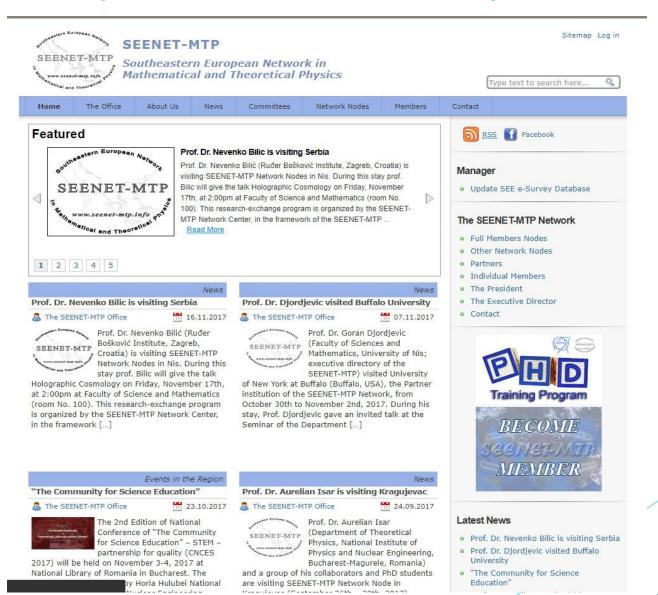
# SEENET-MTP - a regional story

- Hoping for bridging the gap between Southeastern and Western European scientific community, the participants of the UNESCO sponsored BALKAN WORKSHOP BW2003 "Mathematical, Theoretical and Phenomenological Challenges Beyond the Standard Model: Perspectives of Balkans Collaboration" (Vrnjacka Banja, Serbia, August 29 September 3, 2003) came to a common agreement on the Initiative for the SEENET-MTP NETWORK
- The Network was a natural extension of the WIGV initiative (Wissenschaftler in globaler Verantwortung) launched by J. Wess in 1999
- Structure Development 2004 2017
  - 23 institutions from 11 countries in the region joined the Network
  - ▶ 13 partner institutions all over the world
  - about 400 individual members

# Main Objectives and Aims

- Provide a regional framework for the institutional capacity-building in Mathematical and Theoretical Physics
- Strengthening of close relations and cooperation among faculties of science, research institutions and groups, including individual scientists in South-East Europe
- Joint scientific and research activities in the region and fostering interregional collaboration, foremost in a European context, but also with a strong worldwide dimension
- Support capacity building in physics, mathematics and other sciences and technology by initiating new approaches to teaching physics and sciences
- Promote the exchange of students and encourageing communication between gifted pupils
- Promote physics and science in general
- Support the establishment of local and regional centres of excellence in physics and mathematics

#### Web portal: www.seenet-mtp.info



## Full Member Nodes (15)

- Mathematical Institute SANU Belgrade, Serbia
- Astronomical ObservatoryBelgrade, Serbia
- Faculty of Physics, University of BelgradeBelgrade, Serbia
- National Institute for Physics and Nuclear Engineering Bucharest, Romania
- Faculty of Physics, University of Bucharest Bucharest, Romania
- Institute for Applied PhysicsChisinau, Moldova
- Faculty of Physics, University of Babes-BolyaiCluj- Napoca, Romania
- Faculty of Mathematics and Natural Sciences, University of Craiova
   Craiova, Romania

## Full Member Nodes (15)

- Physics Department,
   Mimar Sinan Fine Arts University
   Istanbul, Turkey
- Faculty of Sciences and Mathematics, University of Kragujevac
   Kragujevac, Serbia
- Bogolyubov Institute for Theoretical Physics, National Academy of Science of Ukraine
  Kyiv, Ukraine
- Faculty of Sciences and Mathematics, University of Niš
   Niš, Serbia
- Theoretical Physics Department, Faculty of Physics, Sofia University Sofia, Bulgaria
- Section of Nuclear and Particle Physics, Aristotle University of Thessaloniki
   Thessaloniki, Greece
- Faculty of Physics, West University of Timisoara
   Timisoara, Romania

# Other Network Nodes (8)

- Cankaya University Ankara, Turkey
- Institute of Physics\* Belgrade, Serbia
- Bogazici UniversityIstanbul, Turkey
- Faculty of Science, University of Sarajevo
   Sarajevo, Bosnia and Herzegovina
- Faculty of Science and Mathematics,
   University of Skopje
   Skopje, Macedonia
- The Institute for Nuclear Research and Nuclear Energy Sofia, Bulgaria
- Department of Physics, University of Vlora Vlora, Albania
- Faculty of Sciences, University of Zagreb
   Zagreb, Croatia

## Partner Institutions (13)

- Department of Physics and Astronomy, The Johns Hopkins University Baltimor, USA
- Department of Physics, Faculty of Science and Mathematics
   Banja Luka, Bosnia and Herzegovina
- Department of Physics, Buffalo University Buffalo, USA
- Theoretical Physics, CERN Geneva, Switzerland
- Mathematics Department, Lusofona University
   Lisbon, Portugal
- Department of Theoretical Physics, Jozef Stefan Institute
   Ljubljana, Slovenia
- Lab 170, ITEPMoscow, Russia

# Partner Institutions (13)

- String Theory Group, LMU and MPI Munich, Germany
- Algebraic Structures in Field Theory Group, CBPF
   Rio de Janeiro, Brasil
- The High Energy, Cosmology & Astroparticle Physics Section, ICTP Trieste, Italy
- International School for Advanced Studies (SISSA)
  Trieste, Italy
- Particle Physics Group, Inst. for Theoretical Physics, Vienna University of Technology
  - Vienna, Austria
- Department of Statistics, Faculty of Science, University of Warwick
   Warwick, UK

The Scientific Advisory Committee (SAC) includes a number of outstanding and leading international researchers from both the Southeastern European region (SEE) and other regions of the world

The main responsibilities of the SAC (since 2017) are the following:

- Advise the network on the scientific topics to promote and on the corresponding actions to take
- Advise the network on the scientific events to organise
- Help the network on preparing applications
- Propose funding opportunities

# Scientific Advisory Committee (2017 - )

Ignatios ANTONIADIS, Coordinator LPTHE, UMR CNRS Paris, France Institute for Theoretical Physics Bern, Switzerland



Loriano BONORA International School for Advanced Studies (SISSA) Trieste, Italy



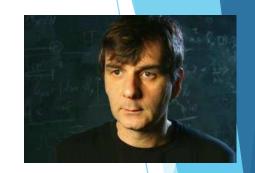
Lars BRINK Department of Fundamental Physics, Chalmers University of Technology Göteborg, Sweden







String Theory Group, LMU and MPI Munich, Germany Center for Cosmology and Particle Physics New York, USA



Marc HENNEAUX
Physique Théorique Et Mathématique,
Université Libre De Bruxelles
Bruxelles, Belgium



Alexei MOROZOV Institute of Theoretical and Experimental Physics Moscow, Russia



Fernando QUEVEDO The High Energy, Cosmology & Astroparticle Physics Section, ICTP Trieste, Italy



loannis RIZOS Department of Physics, University of Ioannina Ioannina, Greece



Timo WEIGAND Theoretical Physics, CERN Geneva, Switzerland



#### Il Current structure and status

# Scientific Advisory Committee (2003-2016)

- Luis ALVAREZ-GAUME CERN (Geneva, Switzerland)
- Ignatios ANTONIADIS, Coordinator Institute for Theoretical Physics (Bern, Switzerland)
- Metin ARIK Bogazici University (Istanbul, Turkey)
- Jonathan BAGGER The Johns Hopkins University (Baltimor, USA)
- Loriano BONORA
  International School for Advanced Studies SISSA (Trieste, Italy)
- Lars BRINK
  Chalmers University of Technology (Göteborg, Sweden)
- Emilian DUDAS
  CPHT, Ecole Polytechnique (Palaiseau, France)
- Georgi DVALI
  String Theory Group, LMU and MPI (Munich, Germany)
- Nemanja KALOPER
  University of California (Davis, USA)

...

# Scientific Advisory Committee (2003-2016)

#### Coordinators:

- Prof. Julius WESS (2003 2007)
- Prof. Goran SENJANOVIC (2008 2013)
- Prof. Ignatios ANTONIADIS (2014 )

### He has been with us ...!

Julius Wess (1934 – 2007) Max-Plank-Institut für Physik München, Germany



- Founder of the WIGV initiative –Scientists in Global Responsibility
- One of the founders of the SEENET-MTP
- Coordinator of SAC (2003 2007)
- Director of the Max-Plank-Institut für Physik

### **Executive Committee**

- The primary objectives of the Executive Committee (EC) are
  - elaboration of the Network Program,
  - implementation of the Network program, and
  - expansion of the Network's financial base

Full member nodes from each country are represented by one member in the EC. Countries with 3 and more full member nodes can delegate up to 2 EC members

Depending on the budget, the EC has at least 1 annual meeting.

The president of the EC is the Executive Director of the SEENET-MTP and its Office

### **Executive Committee**

- Viorel CIORNEA Institute for Applied Physics (Chisinau, Moldova)
- Hristo DIMOV
   Faculty of Physics, Sofia University (Sofia, Bulgaria)
- ► Goran DJORDJEVIC, Executive director Faculty of Sciences and Mathematics, University of Niš (Niš, Serbia)
- Marijan MILEKOVIC Faculty of Sciences, University of Zagreb (Zagreb, Croatia)
- Argyris NIKOLAIDIS Aristotle University of Thessaloniki (Thessaloniki, Greece)
- Yurii SITENKO
   Bogolyubov Institute for Theoretical Physics, National Academy of Science (Kyiv, Ukraine)
- Kayhan ULKER Physics Department, Mimar Sinan Fine Arts University (Istanbul, Turkey)
- Mihai VISINESCU
   National Institute for Physics and Nuclear Engineering (Bucharest, Romania)

# Representative Committee full member nodes

Network Nodes are represented in the Representative Committee (RC) by one person. Members of the RC are included in the preparation and implementation of Network's activities. Depending on the budget, the RC has at least one biannual meeting. Representatives of the "non-full" member nodes are excluded from the voting related to financial issues. RC elects its president

The president of the RC is also the President of the SEENET-MTP Network. In the period between 2003 and 2009 the executive role in the Network was performed by the coordinator

#### Presidents:

- ▶ Prof. Radu CONSTANTINESCU (2009 2013)
- ▶ Prof. Dumitru VULCANOV (2013 )

#### Vicepresident

- Dr Boyka ANEVA (2013-2015)
- Coordinator:
  - ▶ Prof. Goran DJORDJEVIC (2003 2009)



Transition of presidency, nearby Orsova, Romania, August 29th, 2013.

# Representative Committee

- Viorel CIORNEA Institute for Applied Physics (Chisinau, Moldova)
- Radu CONSTANTINESCU Faculty of Mathematics and Natural Sciences, University of Craiova (Craiova, Romania)
- Marija DIMITRIJEVIC CIRIC
   Faculty of Physics, University of Belgrade (Belgrade, Serbia)
- Hristo DIMOV
   Faculty of Physics, Sofia University (Sofia, Bulgaria)
- ► Goran DJORDJEVIC
  Faculty of Sciences and Mathematics, University of Niš (Niš, Serbia)
- Vladimir DRAGOVIC
   Mathematical Institute SANU (Belgrade, Serbia)
- Miroljub DUGIC

   Faculty of Sciences and Mathematics, University of Kragujevac (Kragujevac, Serbia)
- Predrag JOVANOVIC Astronomical Observatory (Belgrade, Serbia)

# Representative Committee

- Alexandru MARCU
   Faculty of Physics, University of Babes-Bolyai (Cluj- Napoca, Romania)
- Argyris NIKOLAIDIS Aristotle University of Thessaloniki (Thessaloniki, Greece)
- Nikolai IORGOV Bogolyubov Institute for Theoretical Physics, National Academy of Science (Kyiv, Ukraine)
- Kayhan ULKER
  Physics Department, Mimar Sinan Fine Arts University (Istanbul, Turkey)
- Mihai VISINESCU
   National Institute for Physics and Nuclear Engineering (Bucharest, Romania)
- Dumitru VULCANOV, President
   Faculty of Physics, West University of Timisoara (Timisoara, Romania)
- Roxana ZUS Department of Physics, Faculty of Physics, University of Bucharest (Bucharest, Romania)

### SEENET-MTP Office

- The decision to form the SEENET-MTP Office was brought by the members of the Executive Committee during the Scientific Meeting QM2005 in November 2005 in Niš
- The decisions that the SEENET-MTP Office with temporary headquarters in Niš grows into a permanent office at the Faculty of Sciences and Mathematics Niš and that the Executive Director of the Network is also the Director of the SEENET-MTP Office were adopted at the RC meeting during the Scientific Meeting SSSCP2009 in Niš, April 2009
- The SEENET-MTP Office as a Division of the Faculty Center for Advanced Study in Natural and Mathematical Sciences exists since March 2011
- Scientific secretary Dr. Dragoljub Dimitrijevic (2011 )
- Web master Dr. Milan Milosevic (2005 )





### SEENET-MTP Centre

- The SEENET RC decided at its meeting in Timisoara, Romania (November 2012) to explore the possibility and means of the SEENET-MTP becoming a legal entity, to represent the Network in project activities and agreements in the future
- The SEENET RC decided at its meeting in Vrnjačka banja, Serbia (April 2013) to establish the SEENET-MTP Centre as the legal entity, and the EC and Niš Office were given the task of carrying out the decision
- The SEENET-MTP Centre was created in 2017

#### III Past activities

### Network Meetings (11) in Serbia (2003-2015)

- BW2003 Mathematical, Theoretical and Phenomenological Challenges Beyond the Standard Model (Vrnjacka Banja)
- BW2005 II SEE Workshop: Challenges Beyond the Standard Model (Vrnjacka Banja)
- QM2005 Quantum Models on Noncommutative and Deformed Spaces (Nis)
- **STMP2006** Selected Topic in Modern Physics (Nis)
- **SQ2007** New methods in string theory and quantization (Nis)
- **SQIQC07** School Of Quantum Information And Quantum Computation (Kragujevac)
- **BW2007** III Southeastern European Workshop: Challenges Beyond the Standard Model (Kladovo)
- **SSSCP2009** Spring School on Strings, Cosmology and Particles (Belgrade/Nis)
- **BSI2011** Balkan Summer Institute 2011 (Donji Milanovac)
  - **BSS2011** Seminar : Trends in Modern Physics
  - BS2011 School : Cosmology and Particle Physics Beyond the Standard Models
  - ▶ **JW2011** Workshop: Scientific and Human Legacy of Julius Wess
  - **BW2011** Workshop: Particle Physics from TeV to Plank Scale
- **BW2013** Beyond the Standard Models (Vrnjacka Banja)
- 2015 1st CERN SEENET-MTP PhD Training Program, (Belgrade)

#### III Past activities

# Network meetings in the region (14+) (2006-2017)

- QFTHS2006 The Spring School in Quantum Field Theory and Hamiltonian Systems (Craiova, Romania)
- MMP2006 International School on Modern Trends in Mathematical Physics (Sofia, Bulgaria)
- NTST2008 International Workshop on New Trends in Science and Technology (Ankara, Turkey)
- MMP2008 International School on Modern Trends in Mathematical Physics (Varna, Bulgaria)
- QFTHS2010 Spring School and Workshop in Quantum Field Theory and Hamiltonian Systems (Craiova & Calimanesti, Romania)
- ▶ **QFTHS and Science Policy 2012** The Joint Meeting on Mathematical Physics and Science Policy (Craiova, Romania)
- ► TIM-13 Physics Conference (Timisoara, Romania)
- QFTHS 2014 Quantum Field Theory and Hamiltonian Systems (Sinaia, Romania)
- ► TIM-14 Physics Conference (Timisoara, Romania)
- 2015 "Lights of the World" (Craiova/Bucharest, Romania)
- ▶ 2015 2<sup>nd</sup> CERN SEENET-MTP PhD Training Program (Bucharest, Romania)
- ▶ **2016** Physics Conference TIM15-16 (Timisoara, Romania)
- **2016 3**<sup>rd</sup> CERN SEENET-MTP PhD Training Program (Timisoara, Romania)
- ▶ **2017** 4<sup>th</sup> CERN SEENET-MTP PhD Training Program (Sofia, Bulgaria)

# Network meetings in Romania (2006-2018)

- QFTHS2006 The Spring School in Quantum Field Theory and Hamiltonian Systems (Craiova, Romania)
- ▶ **QFTHS2010** Spring School and Workshop in Quantum Field Theory and Hamiltonian Systems (Craiova & Calimanesti, Romania)
- QFTHS and Science Policy 2012 The Joint Meeting on Mathematical Physics and Science Policy (Craiova, Romania)
- ► TIM-13 Physics Conference (Timisoara, Romania)
- QFTHS 2014 Quantum Field Theory and Hamiltonian Systems (Sinaia, Romania)
- The Workshop "Widening Participation of CEI Countries in the EU Research Programs", Bucharest, Romania, 25 – 27 May 2014
- ► TIM-14 Physics Conference (Timisoara, Romania)
- 2015 "Lights of the World" (Craiova/Bucharest, Romania)
- ▶ **2015** 2<sup>nd</sup> CERN SEENET-MTP PhD Training Program (Bucharest, Romania)
- 2016 Physics Conference TIM15-16 (Timisoara, Romania)
- ▶ 2016 3<sup>rd</sup> CERN SEENET-MTP PhD Training Program (Timisoara, Romania)
- **2018** The Joint Meeting on Quantum Fields and Nonlinear Phenomena, 18-22 April 2018, Sinaia, Romania

# Personal participation - Bucharest

- S. Berceanu
- M. Visinescu
- A. Isar
- M. Babalic
- C. Babalic
- B. Popovici
- R. Zus
- ~ 20+ students

# SEENET-MTP Projects (15+?)

- UNESCO project CFS 15-76 4500285240 "Lights of World Basic and Engineering Sciences in South Eastern Europe" (2015-2016) (University of Craiova)
- CEI Project "Towards the integration of the physics community in CEI countries into the ERA", 1202.127-14 (2014-2015) with UNESCO, ICTP, EPS, SEENET-MTP
- UNESCO Project "SEEPEP-South Eastern European Physics and Education Program", CFS 14-20 N.: 4500239205 (2014)
- CEI Project "Beyond the Standard Models 2013", 1202.081-13 (2013) with EPS
- UNESCO Project CFS 13-10 N4500194266 (2013)
- ICTP Project "Cosmology and Strings", PRJ-09 (2011-2016)
- DAAD and French Institute "Beyond the Standard Models 2011" (2011)
- ICTP Project "Beyond the Standard Models 2011"
- UNESCO Project "Mathematical and Theoretical Physics SEE", AFC 11-18 n.: 4500143843 (2011)

## **SEENET-MTP Projects**

- The Bavarian State Ministry of Sciences and the Arts and Ludwig-Maximilian University, Munich, Mobility program "String Theory and Theoretical Physics" (2009-2010)
- ▶ ICTP Project " Strings and Cosmology", PRJ-09 (2009 2010)
- UNESCO Project Research-Training SEENET-MTP Network, No. 875.922.8 (2008-2009)
- UNESCO Project (SEENET-MTP)
  - No 875.854.7 (2007-2008)
  - No. 875.834.6 (2006-2007)
  - No. 875.914.5 (2005-2006)
  - No. 875.728.3 (2003)

Approximately: total amount in 14 years ~500.000 EUR

# Partnership in EU projects

 ITN, Marie Curie Initial Training Network "UNILHC" (Unification in the LHC era) PITN-GA-2009-237920 (2009 - 2013)

# Main Activities and results - Summary

- Mobility and training program:
  - About 300 exchanges (both researchers and students) in the region (2003-2018)

on average 20 per year

- Duration of visits: one week (for students up to one month)
- Network meetings: ~ 30 meetings in 15 years, (about 1500 participants)
- Publications Monographs, Network Conference Proceedings: about 15 issues
- SEENET-MTP web portal became one of the most popular source of information concerning MTP in our region

### Results

- More than 225 scientific papers in: Particle Physics, Quantum Field Theory, Cosmology and related fields published with an acknowledgement to these projects and programs
- 11 projects with UNESCO
- 3 Projects with ICTP
- 1 Project with the Bavarian Ministry for research
- 3 projects with CEI Trieste
- One multilateral project: ICTP, UNESCO Venice, EPS, CEI and SEENET-MTP
- A number of other smaller projects with DAAD, DFG and other partners

### Other results

- Promotion of science in particular physics (main activities in Serbia and Romania):
  - ▶ 30 lectures and 3 books
  - ➤ 3 Meetings and Competitions of High School students and undergraduate students: "Science and Society" in Craiova and Turnu Severin (Romania) in 2008, 2009 and 2011, including teachers' meetings and training
  - Specialized class for high school students with particular interests in natural sciences, Nis (2003), Belgrade-Zemun (2015), Novi Sad (2016) Serbia

## SEE-CEI-ERA Project (2013-14)

- Towards the integration of the physics community in CEI countries into the ERA (SEE-CEI-ERA)
- Consortium:
  EPS, ICTP, UNESCO Office Venice and SEENET-MTP Network
  - Supported by CEI Trieste
  - Most of the activities during year 2014
- Part of the activities of the EPS Committee of European Integration
- The aim of the project to bring together scientists, EU officials and science policy experts, representatives of the SEENET-MTP, to establish a partnership between leading scientific institutions and researchers from South-Eastern, Central-East and Western European countries, as well as to consider concrete calls and forthcoming calls for joint projects

# SEE-CEI-ERA Project

Workshop in Bucharest,

25 - 27 May 2014
"Widening Participation of CEI Countries
in the EU Research Programs"
- Training-Research in (Theoretical) Physics



Workshop in Sofia,

November 23 - 25, 2014

"Promotion of physics in the CEI countries and Integrating Access to Research Infrastructures in Europe"



Workshop in Trieste,

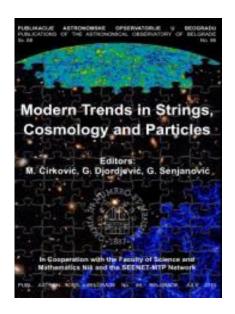
December 11-12th, 2014 "Workshop on Physics Education"

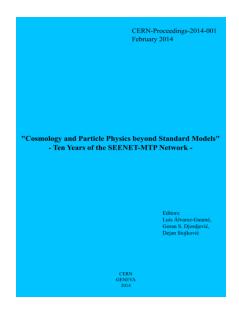


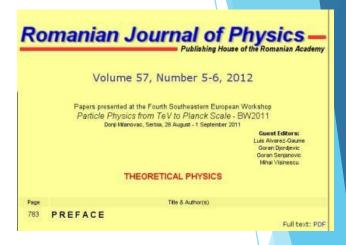
### Some outcomes

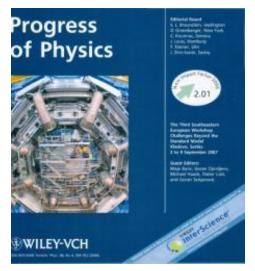
- mRIDGE Using mobile technology to improve policy Reform for Inclusion of Disadvantaged Groups in Education Project number: 562113-EPP-1-2015-1-BG-EPPKA3-PI-FORWARD
- CERN SEENET Agreement and PhD Program

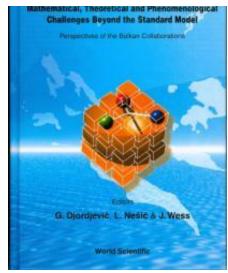
# Some of Network's publications













### The SEENET-MTP in Media

ORRESONNY, Backman 2002

SEENET-MTP









Ten years of SEE-NET-MTP. Lays. SEENET-MTP developed from the vision of Julius Wess (laft) nove-establish scientific co-operation in Bulkan countries pear 1999. Centre: The network's first menting must the 2003 Bulkan Workshop (eff to right). Lais Alunes: Gasnet, Govan Dipodjevil, Guido Martinelli, Paolo Creminelli and Rual Jenenes, (houge credits: (Lafe) Alunes: Gasnet, and cypis Bulkan Milassitic).

### A network for the Balkans

Ten years ago, a project to establish a Balkan network in mathematical and theoretical physics took shape. **Goran Djordjević** looks at the origins of SEENET-MTP and how it developed.

From 1940 in 1990, the development of arientific educational and research espectations by accurate Blackmark followed despolations and economic courses of the relevant countries. Yugo stars is and the six republics is to federative leveloped tree—to a pressor or lease estate.—with both the Bast and the Wart, while Romania and Bulgarta became well integrated into the scientific system of the Soviet Unico and the Extern Bloch to be scientific system of the Soviet Unico and the Extern Bloch to the scientific system of the Soviet.

were Modderin and the Ultraine -occurries on the persiphery of the Ball know but in the same megibloschood. The number and quality of student is goldosting in physics, as well as financial investment in all focused scientific educational work; plumanted. The summer of researchers and Fib distribution in the persipher of searchers and Fib distribution; in the persipher on paradonally in the responsy of university centres that the orthod mass necessary for resulting a significant level several and two termonders and compositives new washort. The remaining young research group and students—across-celly 200 limit appart—bad not form of communication, each of the persipher of the beginn at all—proceeded slowly, while many previously established ten were several.

#### Wess and WiGV

The origin and the Southeastern European Network in Matternatcal and Theoretical Rey acid SERVET-MTP, see I lasted to Julius We wand fair and soon "Wilson-Audition and Obder Versation stage" (WIGV) – "Scientistum global responsibility" – I aunched in 1999

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Oct 25, 2011

### Faces and places (page 2)

European Network in Mathematical

Balkan Summer Institute 2011 converses by the blue Danube The 2011 falkan Summer Institute for 2011 (flSt2011) - this year's core meeting of the South-eastern

Balkan Summer Institute

and Theoretical Physics (SEENET-MTP) - took place on 19 August - 1 September in Donji Allanovac, in the heart of the Djerdap National Park, with an introductory seminar in NIS, Serbia. A total of 178 participants attended the institute from 28 countries.

BSI2011 was composed of four complementary events: "Trends

edition.

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### standards restration from 12 countes from 12 countes from the region. IEEE/C HPF also has partner institution and many them 100 syndroid restration from 100 from 100

The first two days will be devoted to purely smartific problem will be an excellent operaturity to gather healthy experts to countries, the Dunques Linco, the United States of America Hors than 70 participants from 31 countries are expected for

The Hard day will be organized as a sense of round tables on European integration, with a few monted between and modes Promod Society (EPC), before Promod Linux (EPC) and other

The DYCOCO is organized by the Paciety of Science and Hethcongenition with CERN Theory Dissions, LHCHA+ Planck Instithe Physical Success titl as local co-organizer, this weeks as in



Under the the aegis and with the suppport of the European Physical Society [EPS], the Kick-off Meeting of the EPS Committee of European Integration [EPS-CEI] and the Balkan Workshop BW2013 - Beyond Standard Models in Cosmology and Particle Physics, the central meeting of the...

### III Past activities - some vintage photos



III Past activities - more recent photos - 2013!











# Ongoing activities ...

# **Ongoing Projects**

- ICTP SEENET-MTP NT03 "Cosmology Classical and Quantum Challenges" (2017-)
- Main topics: Particle physics, Field and String theory applications in Cosmology
- ▶ 25 exchanges in 2017. Approved budget 10.000 EUR
- ► CERN SEENET-MTP PhD Training Program in HEP (2015-)
- 4 schools were organized
- Agreement and Addendum are at a separate slide.
- ▶ Approved Budget in 2015 40.000 CHF. 18.000 CHF spent.
- ▶ Approved Budget in 2016, 2017 5 kCHF annually (2018?).
- Others, 2017-2018 total: ICTP (6.000 EUR +), EPS (6500 EUR)
- ► CEI (5000EUR)

### CERN - SEENET-MTP PhD program (2015-2018 ...)

- The main part a series of intense, self-connected, one-week seminars for PhD students
- In some exceptional cases, Master students as well as young postdocs could be included
- Each seminar should include lectures followed by appropriate exercises ...
- ▶ It WAS planned to organize 3-5 seminars per year, but ...
- Travel expenses and most of the local expenses are to be covered by the program. The selection of students and the coordination of the program are the joint responsibility of the Program Committee and the local organizers of the particular events
- Some high-level institutions from Europe have been invited to join and support the program ...



### FRAMEWORK AGREEMENT FOR SCIENTIFIC AND TECHNICAL COLLABORATION

#### **REFERENCE KN3487**

(THE "AGREEMENT")

**BETWEEN:** THE SOUTHEASTERN EUROPEAN NETWORK IN MATHEMATICAL AND THEORETICAL PHYSICS ("SEENET-MTP"), a regional Network located at Niš, Serbia, duly represented by Professor Goran Dorđević, Executive Director,

AND: THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH ("CERN"), an Intergovernmental Organization having its seat at Geneva, Switzerland, duly represented by Professor Gian Giudice, Head of Theoretical Physics Department,

hereinafter "Party" and collectively "Parties".

#### CONSIDERING:

That CERN, an Intergovernmental Organization, is a leading global laboratory in particle physics, providing for collaboration of a pure scientific and fundamental character, with participation by scientific institutes from all over the world;

That SEENET-MTP, an association of 22 Institutions from 11 European countries, is a leading Network in regional and interregional cooperation in research, training and capacity building in Theoretical and Mathematical Physics;

That the Parties wish to collaborate in domains of mutual interest, including in particular in training, capacity building and research in Theoretical High Energy Physics, Particle Physics, Computational Physics and Cosmology;

The mutual benefit that the Parties would derive from collaboration between them,

#### AGREE AS FOLLOWS:

#### Article 1 Purpose

This Agreement establishes the framework for collaboration between the Parties in domains of mutual interest, including in particular in training, capacity building and research in Theoretical High Energy Physics, Particle Physics, Computational Physics and Cosmology. The implementation of this Agreement by the Parties shall be subject to availability of resources at the Parties. The Parties shall use the results of their collaboration for non-military purposes only.

#### Article 2 Project

- 2.1 Each Party's contribution to a specific collaboration ("Project"), including, where applicable, the required resources, the duration of the activities and any deliverables and milestones shall be set out in an Addendum to this Agreement, which shall form an integral part of this Agreement.
- 2.2 Except as agreed otherwise by the Parties, each Party shall bear the cost of its participation in the collaboration and the Project(s).

#### Article 3 Experts

Each Party shall ensure the selection of experts with the necessary skills and competence to execute each Project on its behalf, taking into account the nature and the environment of the activities.

#### Article 4 Conduct and safety

- 4.1 The experts shall comply with the rules of conduct and safety in force at the host Party.
- 4.2 Any activity, equipment or other item contributed by a Party to the collaboration shall conform to the safety rules, including any specific safety requirements in force at the host Party where such activity will be performed or such equipment or other item will be installed and operated.

#### Article 10 Coordination

The Parties shall each nominate a technical co-ordinator, who together shall coordinate the overall execution of this Agreement, as well as a safety correspondent who will be responsible for safety matters. Their names and contact details are set out in <u>Annex 1</u>. It is understood that where necessary the Parties may decide to nominate a different technical co-ordinator for each specific Project, whose name and contact details shall be set out in the relevant Addendum.

#### Article 11 Amendments

Any amendment to this Agreement shall be made in writing and signed by the authorized representatives of the Parties.

Signed in two copies, one for CERN and one for SEENET-MTP.

The Southeastern European Network in Mathematical and Theoretical Physics (SEENET-MTP) The European Organization for Nuclear Research (CERN)

Goran Đorđević Executive Director Gian Giudice Head of Theoretical Physics Department

on ... 28./02... 2017

on .06 / 03 2017

### Annex 1: Co-ordinators and safety correspondents

#### For CERN:

Prof. Gian Giudice, Head of Theoretical Physics Department

#### For SEENET-MTP:

Prof. Goran Dorđević, Executive Director

# CERN - SEENET-MTP PhD program

### Seminars:

- Belgrade (Serbia), 21–27 June, 2015 "Supergravity"
- Bucharest (Romania), 8-14 November, 2015 "Modern Aspects of Quantum Field Theory"
- ➤ Timisoara (Romania), 11-17 December, 2016 "Computational methods in Cosmology and General Relativity"
- Sofia (Bulgaria), 15-21 October, 2017 "New Trends in High Energy Theory"

### The next seminar/school:

High Energy and Particle Physics:
 Theory and Phenomenology - BS2018
 June 3 - 9, 2018, Niš, Serbia

# CERN - SEENET-MTP PhD Program - Whishlist -

| Topic  | Freq |
|--|------|
| Mathematical methods in quantum physics      | 9    |
| Supersymmetry                                | 9    |
| Adv. math. subjects with application in phy. | 8    |
| General relativity                           | 8    |
| Particle physics                             | 8    |
| Quantum field theory                         | 8    |
| Supergravity                                 | 8    |
| Cosmology                                    | 7    |
| Nonlinear dynamics                           | 7    |
| String theory                                | 7    |
| Gravitation                                  | 7    |
| Astrophysics and cosmology                   | 5    |
| Hadronic physics                             | 5    |
| Integrable systems                           | 5    |
| Quantum information                          | 5    |
| BSM phenomenology                            | 4    |
| High Energy Physics                          | 4    |
| Inflation                                    | 4    |
| Astrophysics                                 | 2    |
| Black hole thermodynamics                    | 2    |
| Condensed Matter Physics                     | 2    |
| Mathematical Physics                         | 2    |
| Neutrino Physics                             | 2    |
| Path integrals                               | 2    |
| Black holes                                  | 2    |

| Topic                                    | Freq |
|--|------|
| Astroparticle physics                    | 1    |
| Batalin-Vilkovisky formalism             | 1    |
| Collider phenomenology                   | 1    |
| Complex Phenomena in Spatial Plasma Phy. | 1    |
| Composite Higgs                          | 1    |
| Computational physics                    | 1    |
| Conformal field theory                   | 1    |
| Dark matter                              | 1    |
| Exotic stars                             | 1    |
| :Gauge/gravity duality                   | 1    |
| Higher spin theories                     | 1    |
| Intermitence                             | 1    |
| Lattice QCD                              | 1    |
| Nuclear Physics                          | 1    |
| Observational cosmology                  | 1    |
| :QCD                                     | 1    |
| Renormalization group in SUSY theories   | 1    |
| Soft Matter Physics                      | 1    |
| Sterile neutrinos                        | 1    |
| Superstrings                             | 1    |
| Topological field theories               | \1./ |

### CERN – SEENET-MTP PhD Program

### - Students (92 were registered) -

### Belgrade

- Dragoljub Gočanin, gocanindragoljub @yahoo.com
- Nikola Konjik, konjik@hotmail.com
- Dejan Simić, deki\_simic@hotmail.com
- Biljana Nikolić, biljana @ipb.ac.rs
- Dragan Prekrat, dragan.prekrat@gmail.com
- Luka Nenadović, lukanenadovic @gmail.com

#### Bucharest

- Dumitriu Ana Elena, dumitriu.ana.elena@gmail.com
- lancu Vicentiu, vicentiu\_iancu@yahoo.com
- Baran Virgil, virgilbaran @gmail.com
- Romanitan Cosmin, romanitan.cosmin@gmail.com
- ▶ Giubega Lavinia Elena, lavinia-elena.giubega@cern.ch
- Tatiana Mihaescu, mihaescu92tatiana @gmail.com
- Tarna Grigore, grigiq @yahoo.com
- Stroe Mircea, mr.stroe @gmail.com
- Valcea Valentin, valentin.valcea@gmail.com
- Eliza Teodorescu
- Orlandea Marius Ciprian, orlandea @ifin.nipne.ro
- ▶ Babalic Nicoleta Corina, *b\_coryna* @yahoo.com
- Cristinel Stoica, cristi.stoica@theory.nipne.ro

### Craiova

- Predatu Marian, predatumarian@yahoo.com
- Pauna Alina-Maria, NULL

#### Istanbu

- Vildan Keles Tugyanoglu, vildantugyanoglu @gmail.com
- Oguzhan Kasikci, oguzhankasikci@gmail.com
- Basak Ekinci, baekinci@gmail.com
- Taygun Bulmus, bulmust@gmail.com
- Mehmet Helva, m.helva34@gmail.com
- Devin Cesmecioglu, devinces @gmail.com
- Ozlem Ozcelik, ozcelikozlem87@gmail.com

#### Kiev

- V. Naboka, sinyukov@bitp.kiev.ua
- V. Shapoval, sinyukov@bitp.kiev.ua
- V.Sagun, bugaev@th.physik.unifrankfurt.de
- V.Chelnokov, oleg @bitp.kiev.ua
- R. Poberezhnyuk, goren @bitp.kiev.ua
- M.Sydorenko, shtanov@bitp.kiev.ua
- I. Ivanchenko, yusitenko @bitp.kiev.ua
- K. Ershov, vkravchuk@bitp.kiev.ua
- O. Sobol, gorbar@bitp.kiev.ua
- O. Zdorevsky, perepelytsya @bitp.kiev.ua
- P. Gavrylenko, iorgov@bitp.kiev.ua
- A. Shchechkin, iorgov@bitp.kiev.ua

### Ljubljana

Darius Faroughy, Darius.faroughy@ijs.si

## CERN – SEENET-MTP PhD Program

### - Students (92 were registered) -

### Niš

- Dragoljub Dimitrijevic, ddrag@pmf.ni.ac.rs
- Milan Milosevic, mmilan@seenet-mtp.info
- Darko Radovancevic, darko.radovancevic@gmail.com
- Marko Dimitrijevic, marko.dimitrijevic@pmf.edu.rs
- Igor Petrovic, igorpetrovicsb@gmail.com
- Marko Stojanovic, marko.stojanovic@pmf.edu.rs
- Danilo Delibasic, danilo.delibasic@pmf.edu.rs

#### Sofia

- Zhivko Stoyanov NULL
- Yulia Mutafchieva NULL
- Kalin Marinov NULL
- Dimitar Nedanovski NULL
- Stanislav Varbev NULL
- Aleksander Stefanov NULL
- Petar Kokarchev NULL
- Tsevetan Vetsov NULL
- Stefan Mladenov NULL
- Boyan Lazov NULL
- Kalin Staykov NULL
- Lachezar Simeonov NULL
- Kaloyan Zlatanov NULL
- Dimitar Popchev NULL

#### Thessaloniki

- losefidis NULL
- Kalamakis NULL
- Filotheodoros NULL
- Aliferis NULL
- Jaehoon Jeong NULL
- Vasilis Kiosses NULL

#### Timisoara

- Chilom Alin, alin.chilom90@e-uvt.ro
- Sporea Adrian Ciprian, sporea\_89@yahoo.com
- Baloi Mihaela-Andrea, mihaela.baloi88@gmail.com
- Blaga Robert Christian, robert.blaga90@e-uvt.ro
- Busuioc Sergiu, sergiu\_busuioc2006@yahoo.com
- Roman Roxana, tweetwy\_roxana91@yahoo.com

### Zagreb

- Tamara Stemberga, tamara.stemberga@gmail.com
- Goran Popara, gpopara1 @gmail.com
- Petar Culjak, pculjak@phy.hr
- Anamarija Kirin, anamarija.kirin@gmail.com
- Danijel Pikutic, danijel314@gmail.com
- ▶ Boris Ivetic, bivetic@yahoo,com
- Dijana Tolic, Dijana.Tolic@irb.hr
- Bruno Klajn, bruno.klajn@irb.hr
- Tajron Juric, Tajron.Juric@irb.hr
- Luka Popov, Ipopov@phy.hr
- Silvije Domazet, sdomazet@irb.hr

### CERN – SEENET-MTP PhD Program

### - Students (92 were registered) -

### Belgrade

 Dragoljub Gočanin, Nikola Konjik, Dejan Simić, Biljana Nikolić, Dragan Prekrat, Luka Nenadović, Tijana Radenkovic

### Bucharest

Dumitriu Ana Elena, Iancu Vicentiu, Baran Virgil, Romanitan Cosmin, Giubega Lavinia Elena, Tatiana Mihaescu, Tarna Grigore, Stroe Mircea, Valcea Valentin, Eliza Teodorescu, Orlandea Marius Ciprian, Babalic Nicoleta Corina, Cristinel Stoica

### Craiova

▶ Pauna Alina-Maria, Predatu Marian

### Istanbul

 Vildan Keles Tugyanoglu, Oguzhan Kasikci, Basak Ekinci, Taygun Bulmus, Mehmet Helva, Devin Cesmecioglu, Ozlem Ozcelik

### Kiev

V. Naboka, V. Shapoval, V.Sagun, V.Chelnokov, R. Poberezhnyuk, M.Sydorenko, I. Ivanchenko, K. Ershov, O. Sobol, O. Zdorevsky, P. Gavrylenko, A. Shchechkin

### Ljubljana

Darius Faroughy

### Niš

 Dragoljub Dimitrijevic, Milan Milosevic, Darko Radovancevic, Marko Dimitrijevic, Igor Petrovic, Marko Stojanovic, Danilo Delibasic

### Sofia

Zhivko Stoyanov, Yulia Mutafchieva, Kalin Marinov, Dimitar Nedanovski, Stanislav Varbev, Aleksander Stefanov, Petar Kokarchev, Tsevetan Vetsov, Stefan Mladenov, Boyan Lazov, Kalin Staykov, Lachezar Simeonov, Kaloyan Zlatanov, Dimitar Popchev

### Thessaloniki

losefidis, Kalamakis, Filotheodoros, Aliferis, Jaehoon, Jeong, Vasilis Kiosses

### Timisoara

 Chilom Alin, Sporea Adrian Ciprian, Baloi Mihaela-Andrea, Blaga Robert Christian, Busuioc Sergiu, Roman Roxana

### Zagreb

Tamara Stemberga, Goran Popara, Petar Culjak, Anamarija Kirin, Danijel Pikutic, Boris Ivetic, Dijana Tolic, Bruno Klajn, Tajron Juric, Luka Popov, Silvije Domazet

# V Problems, needs, perspectives ...

You are on move ...!

### Forthcoming Network events

High Energy and Particle Physics: Theory and Phenomenology, Nis, Serbia, June 3-9, 2018

http://bsw2018.seenet-mtp.info/bs2018/

Balkan Workshop 2018

Field Theory and the Early Universe (June 10-14, 2018)

http://bw2018.seenet-mtp.info/

15 Years of the SEENET-MTP - During BSW 2018 a small joint program with EPS (on its 50 anniversary) is possible

### School

# SEENET-MTP School and Workshop BSW2018 SCHOOL ON HIGH ENERGY AND PARTICLE PHYSICS: THEORY AND PHENOMENOLOGY

5th School in the CERN -SEENET-MTP PhD Training Program .

3 - 10 June, 2018, Niš, Serbia

15th Anniversary of the SEENET-MTP Network

#### Lecturers

Paolo Creminelli (ICTP)
Emilian Dudas (CPHT Paris)
Gia Dvali (LMU-MPI Munich/NYU New York)
Kyriakos Papadodimas (CERN)
Sergey Sibiryakov\*(CERN)
Giovanni Villadoro (ICTP)

### **Guest Lecturers:**

Alexei Starobinsky (Landau Institute for TP, Moscow)

### Organizers:

Faculty of Sciences and Mathematics
University of Niš, Serbia
Faculty of Mathematics and Natural Sciences
University of Craiova, Romania
SEENET-MTP Centre Niš

### Codirectors:

- I. Antoniadis (Bern, Switzerland/Paris, France),
- P. Creminelli (ICTP).
- G. Djordjevic (Niš, Serbia),
- G. Dvali (LMU/MPI; Germany),
- A. Morozov (ITEP, Russia),
- A. Vikman (Prague, Czech Republic).

http://bs2018.seenet-mtp.info http://phd.seenet-mtp.info

Followed by Balkan Workshop http://bw2018.seenet-mtp.info











www.seenet.mtp.info office@seenet-mtp.info

\* To Be Confirmed

# Workshop

### 15th Years of the SEENET-MTP Network

### SEENET-MITP WORKSHOP BW2018 Field Theory and the Early Universe

10 - 14 June, 2018, Niš, Serbia

#### Codirectors

- · G. Dvall (LMU/MPI)
- · A. Morozov (ITEP)

### **Local Organizing Committee**

- · D. Dimitrijević (co-chairman)

- · M. Milošević
- · J. Aleksić







#### **A Short List of Lecturers**

- · Ignatios Antoniadis (Paris, France)

- · P. Brax (Gif-sur-Tvette, France)

- · V. Vancharin (Minnesota, USA)
- · P. Vanhove (Paris, France)
- · A. Vikman (Prague, Czech Republic)

### Special guests and presentations

- · L. Bonora (SISSA)
- · D. Lee (EPS)
- · E. Tsesmelis (CERN)
- · R. Voss (EPS)

bw2018.scenet-mtp.info www.seenet-mtp.info office@seenet-mtp.info

Preceded by the Balkan School BS2018 http://bs2018.seenet-mtp.info















### Some References and links:

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- ▶ 10. A. Proykova, International Workshop EPS-CEI-UNESCO, e-EPS, October 2014 www.epsnews.eu/2014/10/workshop-eps-cei-unesco/
- 11. D. Lee, Workshop on physics education at ICTP, Trieste, e-EPS, March 2015, www.epsnews.eu/2015/03/report-on-the-workshop-on-physicseducation/
- ▶ 12. <a href="http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Vce/pdf/news/SEE-Networks\_note.pdf">http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Vce/pdf/news/SEE-Networks\_note.pdf</a>

## We are on the ``top`` - 15 years!?

► Might be – at the ``edge``?

# Is that so complicated?!



# Multumim!

- ▶ Is it correct, Mihai? ☺
- ➤ On behalf of guests from Serbia! ☺

# Multumesc! ...

