

20 Years of the SEENET-MTP Network 2003 - 2023

Goran Djordjević

Executive Director of the SEENET-MTP

Where the things begin?



Oberwölz Stadt
Österreich

Julius Wess,



Nis



Biergarten Munich

BW2003, Vrnjačka Banja, Srbija



SEENET-MTP - a regional story 2003

- ▶ 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 2003- 2023
 - ▶ 25 institutions from 12 countries in the region joined the Network
 - ▶ 13 partner institutions all over the world
 - ▶ about 450 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 encouraging communication between gifted pupils
- ▶ Promote physics and science in general

Web portal: www.seenet-mtp.info

The screenshot shows the homepage of the SEENET-MTP website. At the top left is the logo for the Southeastern European Network in Mathematical and Theoretical Physics. The main navigation bar includes links for Home, The Office, About Us, News, Committees, Network Nodes, Members, and Contact. A search bar is located on the right side of the navigation bar. Below the navigation bar, there is a 'Featured' section with a large image of the SEENET-MTP logo and a news item titled 'Prof. Dr. Nevenko Bilic is visiting Serbia'. To the right of the featured section are social media icons for RSS and Facebook, and a 'Manager' section with a link to 'Update SEE e-Survey Database'. Below the featured section, there are two columns of news items. The first column has a 'News' header and two items: 'Prof. Dr. Nevenko Bilic is visiting Serbia' (dated 16.11.2017) and 'Prof. Dr. Djordjevic visited Buffalo University' (dated 07.11.2017). The second column has a 'News' header and one item: 'Prof. Dr. Aurelian Isar is visiting Kragujevac' (dated 24.09.2017). Below the news items, there is an 'Events in the Region' section with one item: 'The Community for Science Education' (dated 23.10.2017). On the right side of the page, there is a 'The SEENET-MTP Network' section with a list of links: Full Members Nodes, Other Network Nodes, Partners, Individual Members, The President, The Executive Director, and Contact. At the bottom right, there is a 'Latest News' section with three items: 'Prof. Dr. Nevenko Bilic is visiting Serbia', 'Prof. Dr. Djordjevic visited Buffalo University', and 'The Community for Science Education'. There is also a 'PHD Training Program' banner and a 'BECOME SEENET-MTP MEMBER' banner.


SEENET-MTP
Southeastern European Network in Mathematical and Theoretical Physics

Sitemap Log in

Type text to search here...

Home The Office About Us News Committees Network Nodes Members Contact

Featured



Prof. Dr. Nevenko Bilic is visiting Serbia

Prof. Dr. Nevenko Bilic (Ruđer Bošković Institute, Zagreb, Croatia) is visiting SEENET-MTP Network Nodes in Nis. During this stay prof. Bilic will give the talk Holographic Cosmology on Friday, November 17th, at 2:00pm at Faculty of Science and Mathematics (room No. 100). This research-exchange program is organized by the SEENET-MTP Network Center, in the framework of the SEENET-MTP ...

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News

Prof. Dr. Nevenko Bilic is visiting Serbia

The SEENET-MTP Office 16.11.2017

Prof. Dr. Nevenko Bilic (Ruđer Bošković Institute, Zagreb, Croatia) is visiting SEENET-MTP Network Nodes in Nis. During this stay prof. Bilic will give the talk Holographic Cosmology on Friday, November 17th, at 2:00pm at Faculty of Science and Mathematics (room No. 100). This research-exchange program is organized by the SEENET-MTP Network Center, in the framework [...]

News

Prof. Dr. Djordjevic visited Buffalo University

The SEENET-MTP Office 07.11.2017

Prof. Dr. Goran Djordjevic (Faculty of Sciences and Mathematics, University of Nis; executive directory of the SEENET-MTP) visited University of New York at Buffalo (Buffalo, USA), the Partner institution of the SEENET-MTP Network, from October 30th to November 2nd, 2017. During his stay, Prof. Djordjevic gave an invited talk at the Seminar of the Department [...]

Events in the Region

"The Community for Science Education"

The SEENET-MTP Office 23.10.2017

The 2nd Edition of National Conference of "The Community for Science Education" – STEM – partnership for quality (CNCS 2017) will be held on November 3-4, 2017 at National Library of Romania in Bucharest. The ... by Horia Hulubei National ...

News

Prof. Dr. Aurelian Isar is visiting Kragujevac

The SEENET-MTP Office 24.09.2017

Prof. Dr. Aurelian Isar (Department of Theoretical Physics, National Institute of Physics and Nuclear Engineering, Bucharest-Magurele, Romania) and a group of his collaborators and PhD students are visiting SEENET-MTP Network Node in ...

RSS Facebook

Manager

- Update SEE e-Survey Database

The SEENET-MTP Network

- Full Members Nodes
- Other Network Nodes
- Partners
- Individual Members
- The President
- The Executive Director
- Contact

PHD Training Program

BECOME SEENET-MTP MEMBER

Latest News

- Prof. Dr. Nevenko Bilic is visiting Serbia
- Prof. Dr. Djordjevic visited Buffalo University
- "The Community for Science Education"

Full Member Nodes (14)

- ▶ **Mathematical Institute SANU
Belgrade, Serbia**
- ▶ **Faculty of Physics, University of Belgrade
Belgrade, Serbia**
- ▶ **National Institute for Physics and Nuclear Engineering
Bucharest, Romania**
- ▶ **Faculty of Physics, University of Bucharest
Bucharest, Romania**
- ▶ **Institute for Applied Physics
Chisinau, Moldova**
- ▶ **Faculty of Mathematics and Natural Sciences, University of Craiova
Craiova, Romania**
- ▶ **Division of Theoretical Physics, Physics Department, University of Ioannina
Ioannina, Greece**

Full Member Nodes (14)

- ▶ **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**
- ▶ **Faculty of Natural Sciences and Mathematics, University of Montenegro,
Podgorica, Montenegro**
- ▶ **Theoretical Physics Department, Faculty of Physics, Sofia University
Sofia, Bulgaria**
- ▶ **Faculty of Physics, West University of Timisoara
Timisoara, Romania**

Other Network Nodes (11)

- ▶ **Cankaya University
Ankara, Turkey**
- ▶ **Astronomical Observatory
Belgrade, Serbia**
- ▶ **Institute of Physics
Belgrade, Serbia**
- ▶ **Faculty of Physics, University of Babes-Bolyai,
Cluj- Napoca, Romania**
- ▶ **Bogazici University
Istanbul, Turkey**
- ▶ **Faculty of Science, University of Sarajevo
Sarajevo, Bosnia and Herzegovina**
- ▶ **Faculty of Science and Mathematics, University of Skopje
Skopje, North Macedonia**
- ▶ **The Institute for Nuclear Research and Nuclear Energy
Sofia, Bulgaria**
- ▶ **Section of Nuclear and Particle Physics, Aristotle University of Thessaloniki
Thessaloniki, Greece**
- ▶ **Department of Physics, University of Vlora
Vlora, Albania**
- ▶ **Faculty of Sciences, University of Zagreb
Zagreb, Croatia**

Partner Institutions (13)

The most active:

- ▶ 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
- ▶ Department of Theoretical Physics, Jozef Stefan Institute
Ljubljana, Slovenia
- ▶ Lab 170 *, ITEP
Moscow, Russia
- ▶ String Theory Group, LMU and MPI
Munich, Germany
- ▶ The High Energy, Cosmology & Astroparticle Physics Section, ICTP
Trieste, Italy

SEENET-MTP Structure

- ▶ Council - 14 members
- ▶ Representative Committee - 25 members
- ▶ Executive Committee - 8 members
- ▶ Council president - Ioannis Rizos (Ioannina)
- ▶ Executive director - Goran Djordjevic (Nis)
- ▶ Scientific Advisory Committee (SAC) - 10 members
- ▶ Coordinator of SAC - Ignatios Antoniadis (Paris)
- ▶ SEENET-MTP Centre Nis - Legal entity, representative of the Network (since 2017)

On 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 were included
- ▶ Each seminar included several lectures, in about 50% followed by exercises
- ▶ It WAS planned to organize 2-3 seminars per year ...
- ▶ Most of travel and local expenses were covered by CERN in 2015. In 2016, 2017 and 2018 contributions were approximately shared as follows: CERN (35%), ICTP (30%), EPS (15%), SEENET-MTP and the local nodes (10%), other (10%).
- ▶ The selection of students and the coordination of the program were the responsibility of the Program Committee (Giudice, Lerche/Papadodimas/Simonovic, Djordjevic, Vulcanov/Rashkov, Miro) and the local organizers of the particular events
- ▶ MPI Munich has been invited to join and support the program ...

CERN - SEENET-MTP PhD program

▶ Seminars/Schools (2015-2018):

- ▶ 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”
- ▶ Niš (Serbia), 3-9 June 2018
“High Energy and Particle Physics: Theory and Phenomenology - BS2018”
- ▶ **Total number of students participated in 5 Schools - 135**

CERN - SEENET-MTP PhD Program

- Students (92 were registered in 2015) -

▶ 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 Cescmecioglu, 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

- ▶ Iosefidis, Kalamakis, Filotheodoros, Aliferis, Jaehoon, Jeong, Vasilis Kiosses

▶ Timisoara

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

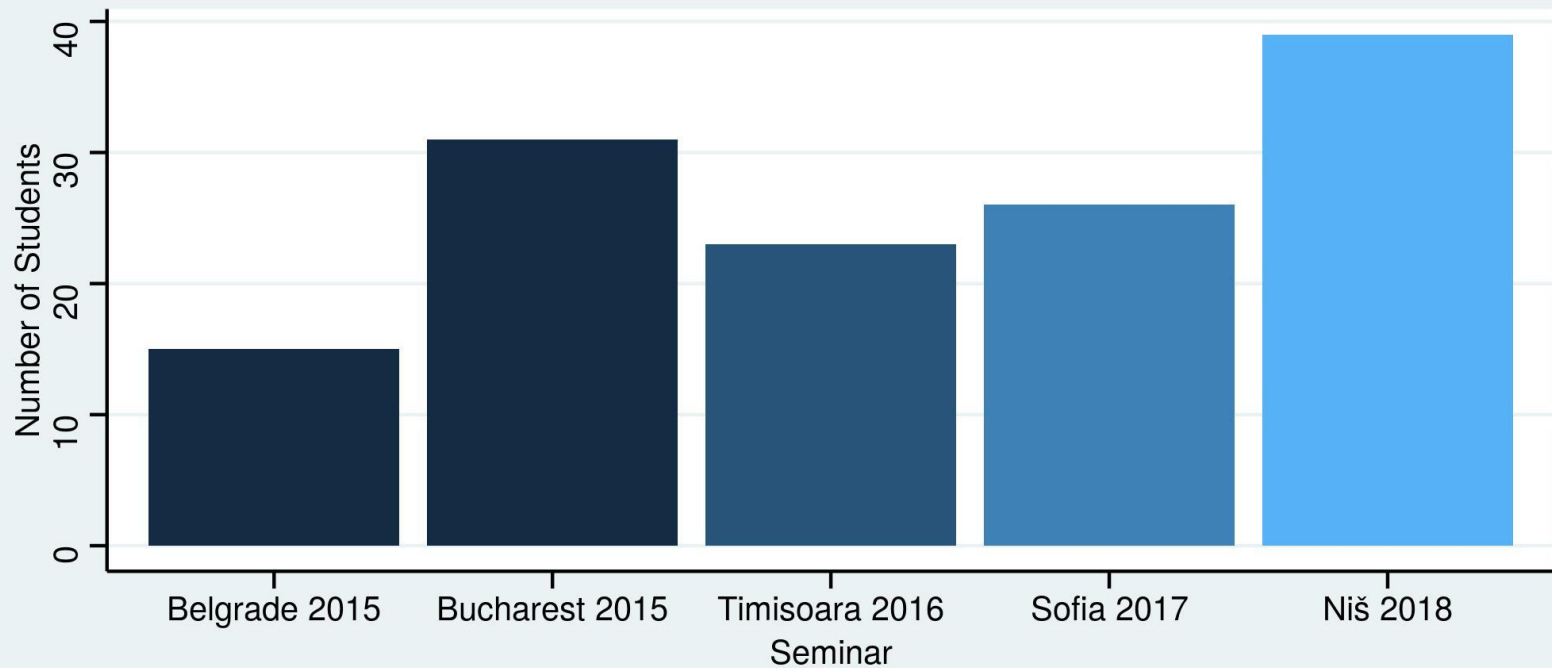
▶ Zagreb

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

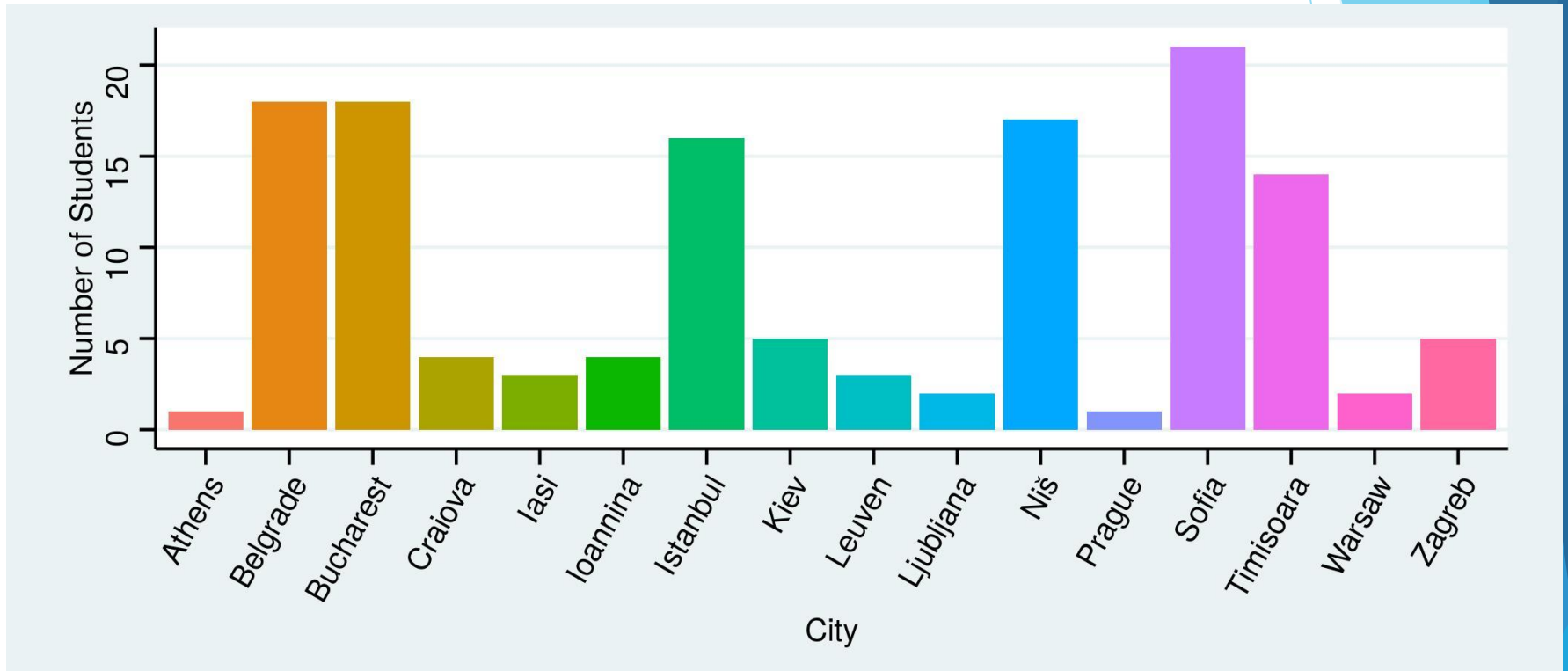
“Pilot - 0th” Seminar Niš 2014

- ▶ The pilot seminar held at Faculty of Science, University of Niš
- ▶ *Completely financed by the SEENET-MTP Office*
- ▶ The title: **COSMO 2014**
- ▶ Date: **12 - 15 February 2014**
- ▶ **Lecturers:**
 - ▶ **Neven Bilic** (IRB, Zagreb)
Dark Matter, Dark Energy, and Unification Models
 - ▶ **Argyris Nicolaidis** (Aristotle University, Thessaloniki)
Introduction to String Theory and its Cosmological Implications
 - ▶ **Cancelled:**
 - ▶ **Ugo Moschella** (Como)
- ▶ **Introductory lecture:**
 - ▶ **Goran Djordjevic** (University of Nis)
Introduction to Cosmology and Inflation
- ▶ **Tutor:**
 - ▶ **D. Dimitrijević** (University of Nis)

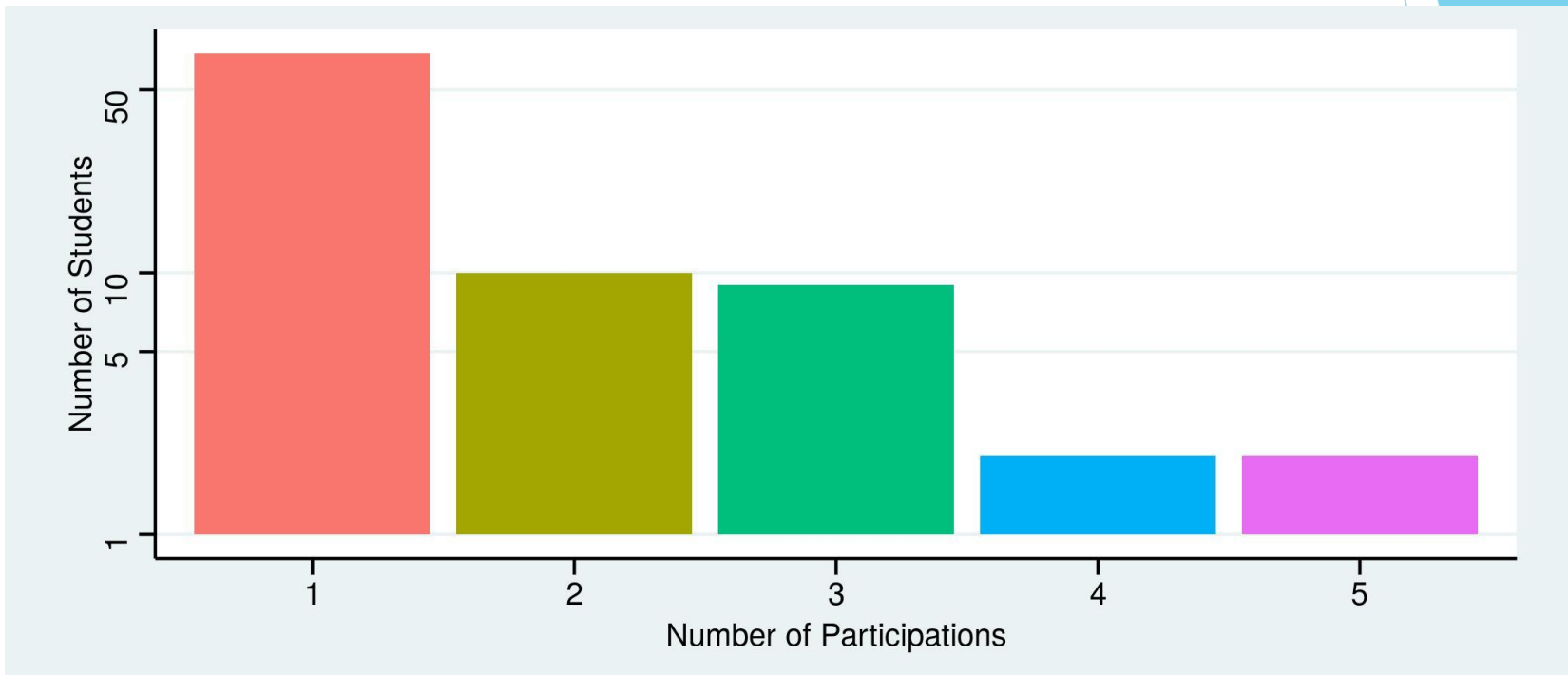
Number of participants in the particular Seminar/School



Number of participation from the Network's or partners' nodes



„Frequency“ of participation in the events



II CERN - SEENET-MTP PhD Program (2019-2022)

- ▶ SEENET-MTP Scientific-Advisory Committee (June 10, 2018) and SEENET-MTP Council (June 14, 2018) proposed to continue the program in the new cycle 2019-2022. **Total number of students-participants 88**

- ▶ 1. [The SEENET-MTP Balkan School on High Energy and Particle Physics: Theory and Phenomenology – BS2019](#)
 - ▶ 3 – 9 June 2019, **Ioannina** (Greece)

- ▶ 2. [Computational methods in HEP](#)
 - 24 – 27 September 2020, **online** (Craiova, Romania)

- ▶ 3. [Gravitation, Cosmology and Astroparticle Physics \(BS2022\)](#)
 - 4 – 10 September 2022 (Belgrade, Serbia)

- ▶ ICTP has joined the CERN – SEENET-MTP Agreement in 2019
- ▶ Role and position of other Institutions/Organizations (EPS, MPI, JINR ...)
- ▶ Open questions and problems (Financing 1. CERN – dropped from 40kCHF to 5kCHF, ICTP 5kEUR, EPS 2-3 kEUR; basic vs advanced level of students ...)

CERN-SEENET PhD Program Proposal

2024-2026

- ▶ Description
- ▶ CERN-SEENET PhD Program is imagined as a series of schools for beginning and advanced PhD
- ▶ Students, mainly from the universities in Balkan countries that are members of SEENET. The schools are supposed to cover various topics in high energy theory and related areas, providing complementary courses to the local PhD programs, exposing students to modern and active areas of research that they do not have chance to hear about and establishing tighter connections between institutions and people in the region and external scientific community.
- ▶ Duration
- ▶ One cycle of CERN-SEENET PhD Program is supposed to last for 3 years, which coincides with a typical duration of PhD programs. The proposed starting dates is (early) 2024.

Format

- ▶ The proposal is to have two schools per calendar or academic year. One school is supposed to be basic and cover the core subjects in particle physics, general relativity and cosmology.
- ▶ It is intended for beginning PhD students, it should have a larger number of participants and it should provide a range of essential courses at the level of the best PhD programs in Europe.
- ▶ The other school is supposed to be more advanced, specializing in a particular subject or a set of related areas of modern research. It is intended for advanced PhD students and young postdocs and it is in general expected to have a smaller number of participants, allowing to form a uniform group of students and ensuring an efficient transfer of skills and knowledge.
- ▶ This format has several advantages. It is flexible in terms of choice of topics, it is adaptable, it is simple to organize, and it allows new PhD students every year to engage with the program, given the alternation between basic and advanced schools.

Topics

- ▶ **Basic schools** are planned to cover the following broad subjects: Quantum Field Theory, Standard Model of Particle Physics, Introduction to Effective Field Theories, Introduction to Cosmology, Theory and Phenomenology of Dark Matter, Advanced General Relativity, Gravitational Waves, Introduction to Conformal Field Theories, Introduction to String Theory
- ▶ **Advanced schools** are planned to cover some of the following topics: Beyond Standard Model of Particle Physics, Advanced Topic in QFT, QCD and Collider Physics, Scattering Amplitudes and Applications, Early Universe Physics, Inflation, Cosmic Microwave Background, Large-scale Structure of the Universe, Effective Field Theory in Cosmology, Conformal Bootstrap, Black Hole Physics, Holography and AdS/CFT, Matrix Models, Quantum Information Theory

SEENET-MTP Projects (18+?)

- ▶ 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 2011-2020”
- ▶ 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 20 years ~600.000 EUR

Including budget for events - 1.000.000 EUR +

Main Activities and results - Summary

- ▶ Mobility and training program:
 - ▶ About 400 exchanges (both researchers and students) in the region (2003-2023)
on average 20 per year
 - ▶ Duration of visits: one week (for students up to one month)
 - ▶ Around 350 papers
- ▶ Network meetings: ~ 35 meetings in 20 years, (about 1800 participants)
- ▶ Publications - Monographs, Network Conference Proceedings: about 20 issues
- ▶ SEENET-MTP web portal became one of the most popular source of information concerning MTP in our region

CEEPUS Program `` Gravitation and Cosmology `` and others ...

- ▶ 2020 - 2024
- ▶ Belgrade, Nis, Banja Luka, Craiova, Sofia, Wroclaw
- ▶ New nodes: Bratislava and Zagreb
- ▶ Coordinatorship G. Djordjevic to M. Dimitrijevic-Ciric - transferred

- ▶ ICTP SEENET NT03 Program (2024-2026) ...

ICTP budget for this program has dropped from 12 000 Eur in 2015 to 1,3 kEUR in 2023 ...

Some References and links:

- ▶ 1. R. Constantinescu, G.S. Djordjevic, *Education and Research in the SEENET-MTP Regional Framework for Higher Education in Physics*, AIP Conf. Proc. 1203, 1261 (2010)
<http://dx.doi.org/10.1063/1.3322351>
- ▶ 2. G. Djordjevic, I. Antoniadis, *Balkan Summer Institute 2011 convenes by the blue Danube*, CERN Courier, vol. 51, no. 9 (2011)
- ▶ 3. G. S. Djordjevic, *Noncommutativity and Humanity - Julius Wess and His Legacy*, Int. Journal of Modern Physics: Conference Series Vol. 13 (2012) p. 66-85
- ▶ 4. L. Moeller, *Julius Wess - a Scientist in Global Responsibility*, Int. Journal of Modern Physics: Conference Series Vol. 13 (2012) p. 141-148
- ▶ 5. G. Djordjevic, *10 Years of the SEENET-MTP*, e-EPS, June 2013, www.epsnews.eu/2013/06/seenet-mtp/
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- ▶ 7. G.S. Djordjevic, *A network for the Balkans*, CERN Courier, December 2013, pp. 21-23 <http://cerncourier.com/cws/article/cern/55332>
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- ▶ 11. D. Lee, *Workshop on physics education at ICTP, Trieste*, e-EPS, March 2015, www.epsnews.eu/2015/03/report-on-the-workshop-on-physics-education/
- ▶ 12. http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Venice/pdf/news/SEE-Networks_note.pdf
- ▶ 13 & 14. CERN and EPS News in their December issues 2024 ... (incoming)