



PHYSICAL SOCIETY OF SERBIA AND MONTENEGRO
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Serbia and Montenegro

REPORT ON THE WYP2005 ACTIVITIES IN SERBIA AND MONTENEGRO

COMMITTEES

Physical Society of Serbia and Montenegro (PSSM) - Participant No. 20, started the preparation for celebration of WYP in April 2004. During 2004 three Committees were established:

1) **WYP National Committee** - to steer overall WYP2005 activities in SRM,

The committee assembles the rectors of all Universities in the country and the president of Serbian Academy of Sciences and Art (SANU); honorary president of the committee is Serbian Prime Minister - Dr Vojislav Koštunica.

2) **WYP Scientific Committee** - to plan and organize specific WYP2005 activities,

The committee assembles the deans of all physical faculties and the directors of all physics institutes in the country; the president of the committee is Dr. Stevan Koicki, member of SANU. Under the coordination of the vice-president of PSSM, Prof. Dr. Ilija Savic, the Scientific committee made a plan of WYP celebration, based on proposals coming from the Serbian Physical Society (SPS), Physical Society of Montenegro (PSSM), and all physical faculties and institutes in the country.

3) **WYP Coordination Board** - to coordinate planned WYP2005 activities,

The board assembles the representatives of SPS, PSSM, and the representatives of all physical faculties and institutes in the country; the president of the board is Dr Marko Popovic, former President of Yugoslav Physical Society.

FUNDING SOURCES

- 1) European Commission through the FP6 project WYP2005 Europe (25 000 EU received, 25 000 EU expected according to the contract)
- 2) Ministry of Science and Environmental Protection of Serbia (720 000 CSD = 8370 EU)
- 3) Ministry of Education and Sports of Serbia (900 000 CSD = 10 400 EU)
- 4) The Abdus Salam International Center for Theoretical Physics, Trieste (1 436 EU)
- 5) Swiss Agency for Development and Cooperation, Office in Belgrade (470 000 = 5 460 EU)

- 6) Campus Muristalden, Bern, Switzerland (3 700 CHF)
- 7) Austrian Physical Society (2 340 EU)
- 8) Commune «Stari grad» Belgrade (224 000 DIN = 2 600 EU)
- 9) Regional office for education of Vojvodina (116 000 DIN = 1 350 EU)
- 10) Office for education of the Municipality of Belgrade (658 000 CSD = 7 650 EU, Expected)

Note: Institute and Faculties which participated in WYP2005 activities received funds from Ministry of Science and Environmental Protection of Serbia, but we do not have information about amounts.

PROMOTION

As a part of preparations for WYP2005, a visit to CERN, in occasion of its 50th anniversary, of a group of physicist was organized by the Physical Society of Serbia in October 2004. The group consisted of: 20 students and 4 professors from high-schools, 10 students and 4 seniors from the faculties and institutes, 1 representative of Ministry of Science, and 1 journalist. Media widely reported about this visit, as well as about CERN's anniversary.

Launching World Year of Physics 2005

Delegation of PSSM participated at the Launching Conference of the WYP2005 „Physics for Tomorrow“, in Paris, January 2005. Delegation consisted of 5 young physicists, 3 seniors and 1 representative of Ministry of Science of Serbia.

Launching World Year of Physics 2005 in Serbia and Montenegro

In Serbia and Montenegro WYP2005 was launched by the meeting “Triumph of Physics of XX Century”, held on March 23rd 2005 in the Institute of Physics in Belgrade. This meeting, with approx. 300 participants, was in fact the very successful promotion of WYP in Serbia and Montenegro, with excellent media response. <http://www.wyp.phy.bg.ac.yu/triumf.htm>

ACTIVITIES

In accordance with the Contract of the FP6 project WYP2005 Europe, events realized by PSSM (Participant No. **P20**) were grouped into five activities:

P.20.1: PHYSARCH - Physics in School Architecture

P.20.2: EINSTEIN'S THOUGHT - Einstein's thought in modern physics, technology, culture, and society

P.20.3: ECO PHYSICS

P.20.4: PHYSICS TALENT SEARCH

P.20.5: OPEN DAY AND PUBLIC LECTURES

P.20.1: PHYSARCH **Physics in School Architecture**

The basic objective of the project is to promote and develop the idea of incorporating physical principles and phenomena into school architecture, with the aim to make physics more appealing to young people and students.

Physarch working group

Dr. Mirjana Božic, Belgrade, Serbia and Montenegro (SRM)
Dr. Beverly Hartline, Washington, USA
Vigor Majic, Valjevo, SRM
MSc Arch Slavica Nikolic, Belgrade (SRM) and New York (USA)
Dr. Dejan Pantelic, Belgrade, SRM
Prof. Dr. Mayank Vahia, Mumbai, India
Prof. Dr. Leposava Vuškovic, Norfolk, USA
Prof. Dr. Giacomo Torzo, Bologna, Italy
Prof. Dr. Ola Hunderi, Trondheim, Norway
Prof. Dr. Kazuo Kitihara, Tokyo, Japan
Prof. Dr. Dušanka Obadovic, Novi Sad, SRM
Arch Milan Maksimovic, Belgrade, SRM
Zoran Grujic, Belgrade, SRM

During 2005 Members of the Working group have been promoting this idea by studying, collecting and publicizing examples of devices for demonstration of basic physical phenomena and laws, which are suitable to be incorporated into school buildings. Members contacted producers of educational equipment for science exhibitions as potential producers of prototype models of such devices and products. Dialogue with architects interested in Innovative school design has been developing. The interest of local and state educational authorities and school investors for the goals of Physarch has been induced.
<http://mail.phy.bg.ac.yu/~bozic/eduarch.html>

COLLECTION OF EXAMPLES

Examples of devices for demonstration of basic physical phenomena and laws, which would be suitable to be incorporated into school buildings were described in : A) published articles, L) lectures and W) contributions at the Workshop «Physics Education and School Architecture» organized in Belgrade (Dec. 16-17, 2005) by the Physarch Working group

A) Published articles

A1) M. Božic, A. Kapor and D. Popovic, *Actions to Improve Physics Education in Serbia and Montenegro and to Celebrate the World Year of Physics*, WOMEN IN PHYSICS 2nd International Conference on Women in Physics, Rio de Janeiro, Brazil, 23-25 May 2005, ed. by Beverly Karplus Hartline and Ariel Michelman-Ribeiro, AIP Conference Proceedings, Volume 795 (American Institute of Physics, 2005) p. 153-154.

A2) M. Božic, L. Vuškovic, D. Pantelic, S. Nikolic and V. Majic, *School Architecture and Physics Education*, The Physics Teacher, Vol. 43, No. 9 (2005) 604-607.

A3) S. Nikolic i D. Pantelic, *Fizika u školskoj arhitekturi*, Arhitektura i gradjevinarstvo, Beograd, Februar 2005, p. 18-22.

L) Lectures

L1) M. N. Vahia, *Geometry and futuristic technologies in a futuristic science inspiring building*, lecture given in the Industry firm and in the Institute of Architecture in Mumbai, India. Long term Interaction programmers on Physics and Architecture, including student competition on «Physics in architecture» and lectures «Physics images in Architecture» was planned in Mumbai, India. <http://www.tifr.res.in/%7Eipa/iyp/summary.htm>

W) Workshop contributions

W1) Ilija Savic, *Urlih Muller on Albert Einstein and modern architecture*

W2) Dejan Pantelic, *Optics in a school building*

W3) Vigor Majic, *Science outreach through the learning environment - ideas to be Implemented in the new building of the Petnica Science Center*

W4) Dušanka Obadovic, M. Garic, A. Vicko and A.Djurendic, *Hands on experiments in School architecture*

W5) M. Božic, Z. Grujic, M.Rakocevic, M. Maksimovic and S. Nikolic, *Open International Student Competition – Design ideas for school as a lecture book of physics*

W6) Darko Kapor and Agika Kapor, *Physics in School Architecture – Experience of a Textbook Writer*

W7) Marija Raškovic, M. Božic and L.Vuškovic, *Free fall – Galileo in a school yard*

W8) Mirjana Božic and Slavica Nikolic, *Mapping nature in, on and around the school Building*

W9) Tomislav Pavlovic, *Some examples of photovoltaic system application in school Architecture in Europe*

W10) Marko Popovic, *Examples of Archimedes law demonstration*
<http://www.wyp.phy.bg.ac.yu/conference> .

PROTOTYPE MODELS

Educational equipment for science exhibitions of various producers is taken as a basis in looking for potential producers of prototype models of science devices suitable for school buildings and courtyards:

1) Whether recorder at the University of Trondheim, designed by Prof. Ola Hunderi and an artist is an excellent example of a prototype model. The picture at the site <http://www.nt.ntnu.no/spm2004/> shows the top of the construction. The sphere (filled with alcohol) is on the top of a 10 m high steel column. The plate at the left is made of a low melting point metal alloy. The sphere act as a focusing lens for sunlight and burns marks in the metal plate. Since the solar elevation changes from day to day you get a burn line for each day recording a few hours around midday. The plate should be changed twice a year.

An exhibit containing 16 plates is mounted on the wall in the entrance hall of the University is used to display the plates.

2) Many devices and demonstrations exposed in Physics Park around Bern Historical Museum during summer 2005 may be applied in school buildings. From Suzanne Menzel, director of the Physics Park, we got permission to utilize their exhibits. Many of their exhibits were produced by Richter Spielgeräte GmbH.

3) Prof. Giacomo Torzo, <http://www.padova.infm.it/torzo/torzo.html>, who created a firm, named Labtrek, spin-off of INFM and Bologna University, is interested to contribute to Physarch by producing prototype models <http://www.labtrek.net/>.

DESIGN

Contacts, dialogue, exchange of information and collaboration with architects interested in innovative school design has been developing during 2005:

1) Open international student competition

DESIGN IDEAS FOR SCHOOL AS A LECTURE BOOK OF PHYSICS

The competition was announced and opened on December 1st 2005 at the Second Tempus Conference “The Teaching of Architectural Design and Urban Design in the European School of Architecture” in Belgrade.

The competition aims to promote research of educational and interactive architecture in terms of: a) Collecting ideas and proposals that inspire creation of dynamic and interactive school spaces that imply student participation and active understanding of natural phenomena; b) Exploring the possibilities of application of various physics phenomena that serve in educational process.

Submission deadline (entries due online) is 25 February 2006 Announcement of winners and exhibition opening is 10 March 2006.

<http://www.wyp.phy.bg.ac.yu/competition>

<http://www.arh.bg.ac.yu/competition>

2) A reference to the Workshop Physics education and school architecture was shown on DesignShare's (International forum for Innovative school design) home page:

<http://www.designshare.com> Profile page in the DesignShare Directory was created for PHYSARCH: <http://www.designshare.com/directory/profile.asp?id=4782>

3) Physarch is presented in Construction directory on the Web:

<http://www.e-construct.net/Architects/Educational.html>

4) Collaboration with architects from the Group for architecture VERY NICE in Belgrade, www.verynice.co.yu, and Architect Studio Baukuh in Genova, <http://www.baukuh.it/> is planned.

NETWORKING – INDUCING INTEREST OF LOCAL AND STATE EDUCATIONAL AUTHORITIES

Members of the Physical Society of Serbia are very active in the current School reform in Serbia. This reform implies renovation and modernization of physics laboratories in primary and secondary schools. The program of Equipping Primary Schools' physics cabinets with Essential Teaching Facilities was proposed in April 2005 to the Ministry of Education of Serbia. Since the goal of Physarch is to enlarge the physics laboratory to include the school

building and courtyard, we proposed to Ministry of Education of Serbia to accept the principles and goals of Physarch as a part of educational reform.

The activities and plans of AIA Committee on Architecture for Education and Finnish National Board of Education will be presented and analyzed at the conference «The school of tomorrow – learning environment, pedagogy and architecture» (to take place in Helsinki in April 2006) . This presentation will be supportive and useful for Ministries of education in other countries.

P.20.2: EINSTEIN'S THOUGHT

Einstein's thought in modern physics, technology, culture, and society

Following the plan we organized many lectures, one conference and one exhibition (presented in several towns) devoted to the presence of Einstein's thought in modern physics and technology. Several books (translations and originals) were published.

Lectures for teachers, researchers and public

Niš, January 2005.

Several lectures on Einstein's achievements were delivered during the traditional January seminar for physics teachers.

Vrnjacka Banja, April 15-17 2005

Several **lectures** delivered during the traditional Annual seminar on physics teaching in primary and secondary schools (350 participants) were devoted to the theory of relativity, Brownian motion and photon.

Beograd, June 15-17 2005

Within the celebration of 10-years anniversary of the Center for Solid State Physics (in the Institute of Physics) Prof. Manuel Cardona from Max Planck Institute, delivered the lecture in Serbian Academy of Science and Art (SANU) about Einstein's contributions to solid state physics.

Conferences

Beograd, SANU, June 27-28 2005

The Symposium THEORY OF RELATIVITY 2005, organized by the Institute of Physics and the Serbian Academy of Sciences and Art took place in SANU. The topics of the lectures were: From Galileo to Einstein, Special theory of relativity, General theory of relativity, Elementary particles, Black holes, Cosmology, String theory. There were 170 participants. The Proceedings will be published at the beginning of 2006. <http://tr2005.phy.bg.ac.yu>

Vrnjacka Banja, 18-23 May, 2005

II Southeastern European Workshop "Challenges Beyond the Standard Model"
<http://www.pmf.ni.ac.yu/bw2005>

Beograd, Institute of Physics, 15-21 September 2005

2nd International Conference on p-Adic Mathematical Physics was devoted to the application of p-adic numbers in physics: from spacetime geometry at the Planck scale and strings, via spin glasses and hierarchical complex systems, to the universe as a whole.

<http://www.p-adic-mathphys2005.phy.bg.ac.yu>

Niš, Faculty of Mathematical and Natural Sciences, 3-7 November, 2005

QM 2005 Workshop – Quantum Models in Non commutative and Deformed Spaces

Exhibitions:

E1) “Albert und Mileva Einstein in Raum und Zeit”, campus Muristalden, Bern, Switzerland (25 august - 16 September 2005), Grammer school, Vaduz, Linchenstein (10 November - 10 December 2005), Saint Gallen (April 2006)

The exhibition presents their childhoods, schoolings, joint studies at ETH, marriage, and then Einstein’s happy and productive years in Bern, Zurich and Prague. The exhibition consists of posters, holograms, demonstrations of photoelectric effect and Brownian motion, books and set of films. An essential characteristic of the lives of Albert and Mileva is their incessant relocation from one town to the other, from one country to the other. This is represented on the map of Europe, with time on the vertical axis.

E2) The Exhibition World Year of Physics 2005

including the exhibition “Albert i Mileva Ajnštajn u prostor-vremenu” (Albert and Mileva Einstein in space-time), Gallery of science and technology of SANU, 10 November 22 December 2005, Museum of Vojvodina, Novi Sad, 23 December 2005 to 12 January 2006.

The catalogue of the exhibition, in Serb and in English, was published

E3) The Exhibition of rare books (old editions of important books) from the Library of Faculty of Physics in Belgrade : books by Boškovic, Newton, Einstein, Pauli, ...

Books:

Translations

- 1) Podvig mladog Ajnštajna, translations by Vukota Babovic and Božidar Anicin of Einstein's papers from 1905 and four later papers, Mikroknjiga, Beograd, 2005.
- 2) Michio Kaku, Einstein’s Cosmos, Ajnštajnov kosmos, translated by Katarina and Ana Ješić (Megraf, Beograd, 2005).
- 3) Armin Herman, Stvaranje nove fizike i put u atomsku eru, translated from german by Branislav Matejic (Gradjevinska knjiga, Beograd, 2005)

New books

- 1) Đorđe Minic, U potrazi za još jednom čudesnom godinom (Looking for one more miraculous year), (DNCentar, Beograd, 2005).

P.20.3: ECO PHYSICS

ECO PHYSICS is an environmental physics project within the WYP national activities in Serbia and Montenegro, mainly concerned about improving the research activities and teaching process in schools, universities and research institutions. This project also, presents a solid base to establish a good relationship, through the exchange of data and experience, with other relevant organizations in the neighboring countries.

National committee in environmental physics started its activities in October 2004. It consists of eight members: Dragoljub Belic, Mirjana Terzic, Ljubiša Nešic, Dragan Markušev, Dragana Milicevic, Ivan Zornic, Slavoljub Mijovic, Mirjana Tasic and two honorary members; Djordje Bek-Uzarov and Ilija Savic - covering most of university centers and research institutes in Serbia and Montenegro.

Measurements. Following our plan, several hundreds of school teachers and their students, in collaboration with physicists from research institutes and universities, have performed numerous measurements of radon concentration and ambient noise, as well as the measurements of air and water purity in Serbia. Special notebook - Physics Notes – has been created for teachers and students to be used in presenting the results of environmental measurements.

Radon measurements and analysis with alpha-track (AT) detection method in urban and rural areas are performed together with traffic noise (TN) pollution measurements in some urban areas and measurements of physical and chemical water parameters (PCWP) in big industrial centers. Some Institutes (Institute of Physics – Zemun), Faculties (Faculty of Physics – Beograd, Faculty of Natural Sciences – Niš, Faculty for Safety at work – Niš) and University Departments (Department of Physics – Novi Sad) have been included in analysis and discussions of the obtained results.

The National conference «ECO PHYSICS 2005»

Most of the results of measurements were reported at the National conference “ECO PHYSICS 2005” held on 22nd-23rd May 2005 in the Grammar School, Kruševac, Serbia. Among 100 participants were 15 invited speakers and 83 contributors and guests. The contributions were published in ECO PHYSICS 2005 Digest (in Serbian) and some selected papers in ECO PHYSICS 2005 Proceedings (in English). The Digest has 275 pages and consists of: 10 plenary lectures, 4 invited lectures, 3 oral and 23 poster contributions. The Proceedings has 154 pages and consists of 8 plenary and 4 invited lectures.

Continuation of measurements and the publication of results

The measurements of radon concentration, noise and water pollution will be continued in order to map the largest possible part of Serbia. Final results are planned to be published in English in *Facta Universitatis Journal Special Issue* (printed by University of Niš) in February 2006. Also, all these results will be presented on our site (<http://ekofiz.dfs.org.yu>). It will be reconstructed (with English pages) until that time.

P.20.4: PHYSICS TALENT SEARCH

Search of talents for physics among primary and secondary school students during 2005 was done in two ways: 1) using our traditional methods - physics competitions and dialogue with students through the journal *Mladi fizicar* (Young physicist) and 2) using new method proposed by the WYP2005 International Committee - launching the special call for the search of physics talents of WYP2005.

WYP2005 talents

Within the WYP activities, the International project "Physics Talent Search" has been treated with special care. National Committee of Serbia and Montenegro was formed in October 2004. It consists of six members: Dr. Mirjana Popovic-Božic, Dr. Ljiljana Simic, Jelena Grujic, Dr. Ilija Savic, Duško Latas and Mr. Branislav Cvetkovic (chairman). It is worth stressing that there are an equal number of male and female committee members.

Till the end 2004. National Committee published six advertisements in the journal "Mladi fizicar" (Young physicist) – journal for elementary and secondary school students issued by Serbian Physical Society, "Prosvetni pregled" (journal issued by Serbian ministry of education, which is regularly distributed to all elementary and secondary schools in the country) and "Zabavnik" (newspaper for youngsters issued by "Politika", the oldest newspaper in the region). The first advertisements were merely information about Talent search project, while the latter contained detailed instructions to students who were willing to participate.

We have accepted all recommendations of the International committee although we have included several new essay topics. One of them is "the knowledge I acquired by learning physics helped me to understand problem x within the subject y". This sentence is written on the front page of the journal "Mladi fizicar", Number 97.

The deadline for submission of works was July 15 2005.

The total number of registered participants via Internet and mail was 228. But, 71 students have sent their works. Students' works are very interesting and imaginative.

According to the recommendation of the International Committee, and having in mind specific school system, in our country students are divided into four categories:

Category	Class	Number of participants
1	4 th to 6 th class of elementary school	(87) 17
2	7 th and 8 th class of elementary school	(65) 22
3	1 st and 2 nd class of secondary school	(58) 23
4	3 rd and 4 th class of secondary school	(18) 9

National Committee reviewed and evaluated student's works and made a rang list of competitors for each category. In September 2005 National Committee sent to Dr. Beverly Hartline, the Head of the International Committee, the proposed list of young ambassadors from Serbia and Montenegro. The proposed numbers of students (eight male and eight female) in four categories were: 4, 5, 5, 2 in categories 1, 2, 3, 4, respectively.

In November 2005 the National Committee accepted the invitation of the International Committee and National Taiwan Normal University to send the team of physics talents from Serbia and Montenegro to the International Physics Young Ambassadors Symposium in Taiwan. The National Committee choosed three male and three female students, and two

leaders to be members of our team. The team participated at the Symposium, which took place in Taipei from December 31 to January 3, 2006.

At the beginning of February there will be in Belgrade the ceremony to award prizes, medals and certificates to best participants of the activity “Physics talents search”.

Physics Olympiads

Annual Physics competitions of student in primary and secondary schools were organized in four levels: school, regional, republic and federal. At the Federal competition were selected members of teams to participate at the XXXVI International Physics Olympiad in Spain and Second Junior Science Olympiad in Indonesia.

The team of Serbia and Montenegro at the XXXVI Physics Olympiad in Salamanca, Spain, (July 2005) won one silver medal, one bronze medal and one honorable mention.

The team of Serbia and Montenegro at the Second Junior Science Olympiad in Indonesia (December 2005) won two silver and two bronze medals.

Dialogue of the journal Mladi fizicar (MF) with students

Mladi fizicar is now 25 years old. During autumn 2005 the issue No. 100 was published.

In each issue MF publishes problems for the prize contest. Students are asked to send their solutions to the problems. MF invites students to ask questions, by ordinary mail and through the Internet. Members of the Editorial board answer to students questions. MF investigates the opinion of readers by making surveys. The Web site of the journal Mladi fizicar is:

<http://mf.dfs.org.yu/>

Lectures and laboratory work for secondary school students interested in physics

All Physics Faculties and Physics Institutes in Serbia organized during 2005 special lectures, laboratory works and camps for secondary school students interested in physics.

Specialized physics classes in Niš, Belgrade and Novi Sad

Physicists from Physics faculties and Physics institutes were engaged in teaching, testing and organizing competitions for school pupils attending special physics classes formed in several schools in Serbia.

P.20.5: OPEN DAY AND PUBLIC LECTURES

The objective of this activity was to organize open days at all Physics Faculties and Institute and public lectures from modern topics in physics. From the vast list of undertaken events, as an illustration, we mention:

February, Kolarcev narodni Univerzitet, Belgrade

Public lectures on Special and general Relativity, once a week during February, in Kolarcev narodni Univerzitet. Lectures were very well attended.

March and April, Faculty of Physics, Univeristy of Belgrade

Open days for students of secondary schools.

March, Primary school Kralj Petar I. Belgrade
Quiz about “Scientific work of Nikola Tesla”.

April, Idvor

Symposium devoted to Mihailo Pupin in his birth place Idvor, in occasion of 150 years of his birth. The Symposium was organized by the Department of Physics, University of Novi Sad.

March, April, Web site of TV station B92.
Quiz about Einstein.

April 18 - 19, north-eastern Vojvodina

Physics teachers and school pupils participated in the International event **Physics enlightens the world**. Signal was received from Rumanian physicists in Srpska Crnja and was transmitted to Hungarian physicists in Horgosh.

April 16, Institute for Nuclear Sciences, Vinca

Open day for biology, physics and chemistry teachers in primary and secondary schools. Video conference with Pierre Lena, member of French Academy of Sciences was realized.

April, Faculty of Electrical Engineering, University of Belgrade

The TEMPUS program seminar on improving teaching program of physics at technical faculties in Serbia.

April 15, Institute of ophthalmology

Physicists participated at the Seminar «Seeing colors», organized by the Medical Academy of Serbian society of medical doctors.

May 24, Institute of Physics

Celebration of Ten years of the Center for Solid State Physics and new materials in the Institute of Physics, Belgrade.

May, Faculty of Physics, University of Belgrade

Call to students was announced to participate in the Contest “Scientific legacy of Albert Einstein”.

May, Dom omladine (Youth center), Belgrade

The exhibition of holograms of artistic objects produced using Galois fields. Holograms were made in the Institute of Physics in Belgrade.

June 1, Faculty of Physics, University of Belgrade

“Current research topics” – one day seminar during which faculties presented their research topics and achievements to students and wider public.

June 11-16, Zlatibor, Serbia

South-East European Summer School for Hands on Primary Science Education

<http://rukautestu.vin.bg.ac.yu/handson/index.htm>

21 June, Institute for nuclear sciences, Vinca

Pupils from the primary school Užicka Republika participated in the Video conference Grenoble, Aleksandria, Asuan, Belgrade “Following the steps of Erathostenes”.
<http://rukautestu.vin.bg.ac.yu>

August to September, 2005, Planetarium of the National Observatory

Astronomical society “Ruder Boškovic” organized a series of public lectures about relativity, gravitation and cosmology.

September, Campus Muristalden, Bern

Physicist Mirjana Božic and psychiatrist Milan Popovic from Belgrade took part in “Matinee zu Ehren der Physikerin Mileva Maric Einstein”, organized by the Office for equality of the Stadt Bern.

October, Serbian Academy of Sciences and Arts, Belgrade

Symposium based on the International contest “Influence of physics on the development of natural sciences, medicine, technology, sociology and culture”.

October to December 2005, Gallery of Science and Technology of SANU, Belgrade

Weekly series of public lectures on relativity, field theory, gravitation, elementary particle physics and nanoscience.

January, May, June, December, Section of Serbian Physical Society Niš

Four public lectures were organized: Quantum chromodynamics - forces in color; Science as a fairytale; Evolution of universe; Astrobiology.

SUCCESS OF ACTIVITIES

We consider that all our activities were successful. Two main conferences, Triumph of Physics of XX Century and Theory of Relativity 2005 attracted great number of physicists from all fields.

The conference “Influence of physics on the development of natural sciences, medicine, technology, sociology and culture” attracted scientists from all fields who work in Serbia as well as Serbian scientists who live and work abroad. Many lecturers at this conference presented the importance of physics for modern development of biophysics and brain studies. Two series of public lectures in Belgrade were very well attended.

Great number of people visited our exhibitions in Belgrade, in Novi Sad, Bern and Vaduz.

We noted increased interest for physics among students of primary and secondary schools. We had great numbers of competitors at all physics competitions. Our teams at the International Olympiads were with a maximal allowed number of members and were successful. Number of subscribers for the journal Young physicist increased. This is due to the World Year of Physics as well as to a new design of this journal.

In Media there were more articles and emissions about physics than in previous years.

From all that we conclude that our activities contributed to an increase of public understanding of the importance of physics for our civilization.

VIDEOS AND CINEMATOGRAFICAL MATERIAL

All talks and lectures at the meeting “Triumph of Physics of XX Century” were recorded and may be seen at <http://www.wyp.phy.bg.ac.yu/triumf.htm>

Physicists from the Faculty of Natural Sciences in Novi Sad and journalists from TV Novi Sad produced several emissions on physics topics. The concept of emissions were done by physicist Darko Kapor. The Emission “Einstein’s constellation” consists of several parts: The era of physics, Solution of the photo effect riddle, Light and lasers, Statistical physics, Special theory of relativity, General theory of relativity, $E = mc^2$, The emissions attracted a lot of attention of the TV audience.

The film “Mileva Einstein Maric; Early years and move from Titel to Zurich” recorded few years ago by TV Novi Sad, accompanied our exhibitions. Journalist Radovan Brankov produced video about Albert and Mileva Einstein, entitled «We are Einstein».

INVOLVEMENT OF PRESS, MEDIA, TV, RADIO

In January Radio Novi Sad made one hour interview with participants (one student and one leader) at the Launch conference of WYP2005 in Paris. Several newspapers in Vojvodina published interviews with student from Novi Sad, who was at the Launch conference in Paris.

Press published many articles and emitted many emissions about Albert Einstein and his work, as well as about Mileva Einstein Maric.

Press and media widely reported about the meeting “Triumph of Physics of XX Century”, held on March 23rd 2005 in the Institute of Physics in Belgrade. When World Year of Physics 2005 was launched in Serbia and Montenegro.

The preparation and evolvment of the event Physics enlightens the world attracted a lot of attention of press and media.

Swiss newspaper published in Bern reported about the exhibition “Albert und Mileva Einstein in Raum und Zeit”.

Press (Politika, Vreme, Blic, Danas, Glas javnosti, Vecernje novosti) and TV (RTS; B92, Pink, Studio B, BK, TV Novi Sad) made many reports and interviews about the exhibitions in occasion of the World Year of Physics. Exhibitions were opened in November in the Gallery of science and technology of Serbian Academy of Sciences and Arts, and in December in the Museum of Vojvodina in Novi Sad.

Newspapers published several interviews with winners of the prestige annual prize “Marko Jaric” awarded to Zoran Petrovic and to Nemanja Kaloper, American physicist of Serb origin.

Two journals for architecture and civil engineering, AG Magazine and Module published two articles about the activities on the project Physics in school architecture.

Press reported about participation of teams from Serbia and Montenegro at the Olympiads in Spain and Indonesia. The newspaper Politika published nice article about the Symposium of

Young physics ambassadors in Taiwan. Several TV stations interviewed members of our team.

Journal “Vasiona” published many articles about WYP2005 events, Einstein and his work.

ADVERTISING MATERIALS, STAMPS, BEIGES

WYP logo

Author of WYP2005 logo made for us the file of the logo with text in Serb. Both versions of WYP logo, English and Serbian, were used for all activities in Serbia and Montenegro.

Beiges

Institute of Physics issued beiges with WYP logo which was distributed during many events. For the Symposium Theory of Relativity 2005 Institute of Physics issued beiges with Einstein’s portrait.

Posters and flyers

For all conferences and exhibitions appropriate color posters and flyers with WYP logo, in electronic and printed form, were made and widely distributed.

Shirts

Primary school «Momcilo Popovic-Ozren», Paracin, distributed shirts with WYP logo and the school emblem to all participants of the Republic physics competition for primary schools students.

Stamps

Stamp editor of PTT of Serbia and Montenegro, Jugomarka, issued in July two stamps and the first envelope for the World Year of Physics 2005. One stamp is with the portrait of Einstein, another shows the event Physics enlightens the world.

WEB sites

All participating institutions opened WEB site informing about past and forthcoming WYP events. The central WEB site is: <http://www.wyp.phy.bg.ac.yu>

CONTACTS WITH POLICY-MAKERS

At the Launching event of WYP2005 in Serbia and Montenegro participated Minister of science and technology of Serbia, Prof. Aleksandar Popovic and other policy makers?

Contacts with policy makers culminated during the Symposium “Influence of physics on the development of natural sciences, medicine, technology, sociology and culture” in Serbian Academy of Science and Arts. Vice-president of the Serbian government, Prof. Miroljub Labus, spoke about the importance of science for the development of the society.

Prof. Labus was especially pleased by the fact that scientists from Serbia and Montenegro got eight of twelve projects which Commission of science of European Communities awarded to Western Balkan countries. This was based on reviews of project proposals to the special FP6 call for Western Balkan countries. Of these eight projects, six go to physicists, four of which go to the Institute of Physics in Belgrade.

We would like to point out that since year 2000; assistants for international collaboration of Minister of science of Serbia were physicists, who provided permanent contacts with high policy makers.

S T A T I S T I C S

At this moment we are not able to express statistically effect of our activities on students enrolling. But, we have some indications about the increase of interest for physics among students in primary and secondary schools.

Belgrade, 23 February 2006.

Prof. dr. Ilija Savic
Vice-president of the Physical Society of Serbia and Montenegro