BPU11 CONGRESS

11TH International Conference of the Balkan Physical Union

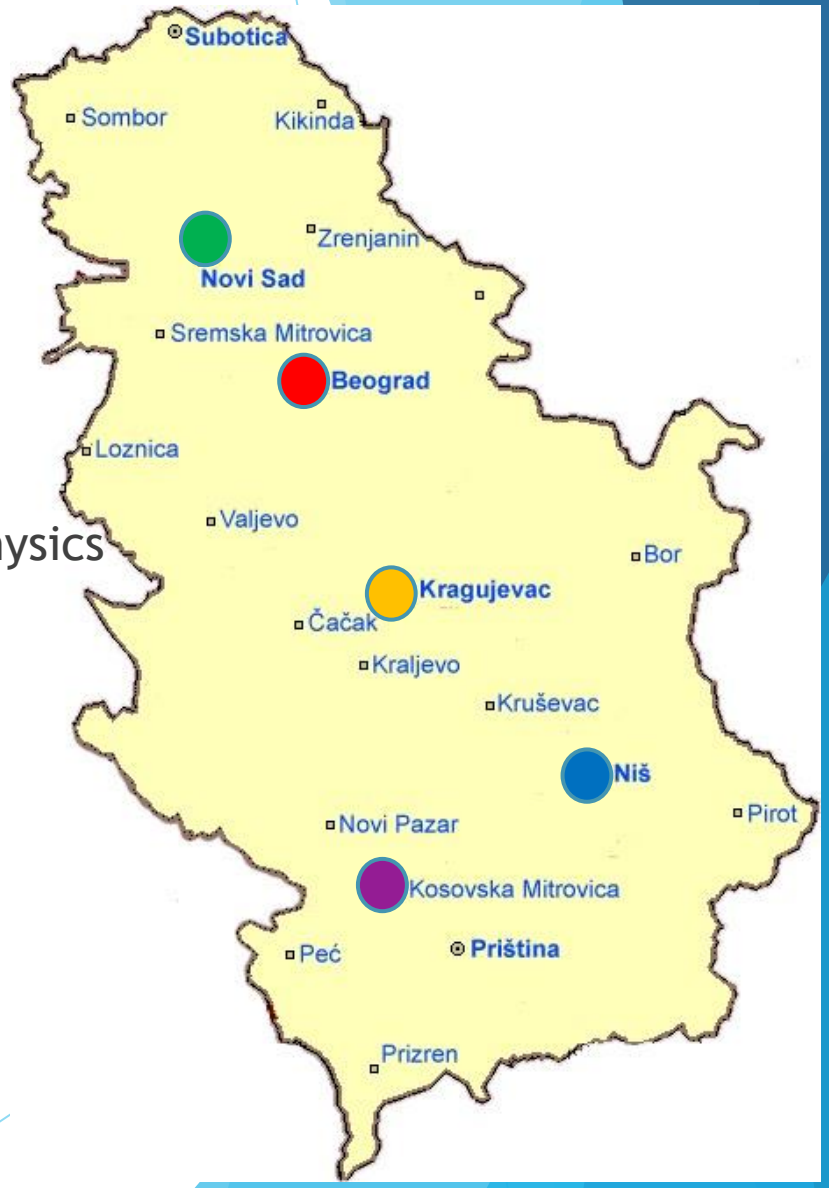
28 August – 1 September, Belgrade, Serbia

Roundtable 5

Models of Studying Physics in European Universities
Specificities in Balkan Countries

SERBIA

- University of Belgrade, Faculty of Physics
- University of Novi Sad, Faculty of Sciences, Department of Physics
- University of Niš, Faculty of Sciences and Mathematics, Department of Physics
- University of Kragujevac, Faculty of Sciences, Institute of Physics
- University of Priština in Kosovska Mitrovica, Faculty of Science and Mathematics, Department of Physics



Study programs

University of Belgrade, Faculty of Physics

- Department of Physics
- Department of Meteorology

➢ **Undergraduate academic studies Bachelor in Physics** – 4 years (240 ESPB)

- General Physics - Students in this program acquire skills in physics and physics teaching methodology, which prepares them for work in primary and secondary schools.
- Theoretical and Experimental Physics – Preparation of students for research in physics and related scientific disciplines.
- Applied and Computer Physics – In addition to courses in physics, this study program teaches programming techniques and creating numerical simulations. Students are trained to work with large databases and information systems in physics and in general.
- Meteorology – In the first 2 years of study the curses provides students the basic knowledge in physics and introduction in meteorology, while in the third and the fourth year courses are related to knowledge in meteorological disciplines.

➢ **Master academic studies in Physics** – 1 year (60ESPB)

Same four study group as in the the Undergraduate academic studies.

Master students of physics may choose between different scientific field such as: Classical and quantum optics and lasers, Quantum and mathematical physics, Nuclear physics, Statistical physics, Physics of atoms and molecules, Physics of ionized gases and plasma, Physics of condensed matter Physics of particles and fields, Applied physics Teaching physics, Biophysics, Computational physics.

Within meteorology, research is being carried out in the field of: Dynamic meteorology, Climatology, Applied meteorology and ecology, Meteorological measurements and informatics, Synoptic meteorology, Cloud physics.

➢ PhD academic studies – 3 years (180 ESPB)

Depending on the preference, there are 10 areas of PhD studies:

- Quantum, mathematical and nanophysics,
- Quantum fields, particles and gravity
- High energy physics and nuclear physics
- Physics of atoms and molecules,
- Quantum optics and lasers,
- Physics of ionized gas and plasma,
- Condensed matter physics and statistical physics,
- Applied Physics
- Teaching physics,
- Meteorology

Year	Bachelor	Master	Phd
2021/22	70	34	23
2020/21	81	57	8
2019/20	75	40	15
2018/19	108	31	23
2017/18	102	37	11
2016/17	140	44	12
2015/16	174	35	25

Study programs University of Novi Sad, Faculty of Sciences, Department of Physics

- **Undergraduate professional studies Optometry** – 3 years (180 ESPB)

The only studies of this field of study in Serbia. The study program is carried out with the significant contribution of colleagues from the Faculty of Medicine. Upon completion of their studies, students acquire the academic title of Vocational Optometrist and are qualified to independently run a business in the field of eye optics and optometry.

- **Undergraduate academic studies Bachelor of Science in Physics** – 4 years (240 ESPB)

In the first 2 years of study the courses are mostly general and mandatory, while in the third and the fourth year the number and type of elective courses increases, which allows students to be directed in one of the various directions: general research in theoretical or experimental physics (nuclear physics, physics of ionized gases, physics of condensed matter),medical physics, astrophysics and astronomy.

- **Master academic studies in Physics** – 1 year (60ESPB)

There are 7 orientations corresponding to special disciplines of physics: Research (Materials Physics, Nuclear Physics, Plasma Physics, Theoretical Physics of Condensed Matter), Applied Physics Nanoscience, Medical Physics, Astrophysics

- **Integrated academic studies in Physics Education** – 5 years (300 ESPB)

The aim of the foundation of this study programme is to provide quality teaching staff for lower levels of education. The first two years of study largely coincide with the Undergradu-ate Academic Studies in Physics, and a significant difference occurs in the higher years of study, when the number of courses in physics teaching methodology, pedagogy and psychology increases.

➢ **PhD academic studies** – 3 years (180 ESPB)

Depending on the preference, there are 6 areas of PhD studies:

- PlasmaPhysics and Physics of Ionized Gases
- TheoreticalPhysicsof Condensed Matter
- Nuclear Physics
- Physics of Materials
- Medical Physics
- Applied Physics: Nanoscience

	2021/22	2020/21	2019/20	2018/19	2017/18	2016/17
Bachelor	44	54	51	48	65	61

- **Undergraduate academic studies Bachelor in Physics** – 3 years (180 ESPB)

- **Master academic studies in Physics** – 2 year (120 ESPB)

There are 3 orientations corresponding to special disciplines of physics:

- Theoretical Physics with Applications
- Experimental and Applied Physics
- Physics Education

- **PhD academic studies in Physics** – 3 years (180 ESPB)

Year	Bachelor	Master	Phd
2021/22	5	2	1
2020/21	11	6	5
2019/20	18	5	3
2018/19	5	8	2
2017/18	26	5	0
2016/17	26	7	5

Undergraduate academic studies – 4 years (240 ESPB)

In the first 2 years of study the courses are mostly general and mandatory, while in the third students choose one of four modules:

A - general physics: Bachelor of physics - for general physics

B - teacher of physics and computer science: Bachelor of physics - teacher of physics and informatics

C - information technology and electronics: Bachelor of physics - information technology and electronics

D - medical physics: Bachelor of physics - medical physics

Master academic studies in Physics – 1 year (60ESPB)

There are 5 modulus upon completion of Undergraduate studies, which concern the following titles:

A1 - Master of physics - for general physics

A2 - Master of physics - professor of physics

B - Master of physics - professor of physics and informatics

C - Master of physics - information technology and electronics

D - Master of physics - medical physics

PhD academic studies in Physics – 3 years (180 ESPB)

In average about 10-12 students attend first year of undergraduate studies, and in average there are only few students per year at Master level of studying. PhD studies attend one or no student per year.

Study programs

University of Priština in Kosovska Mitrovica,

Faculty of Sciences and Mathematics, Department of Physics

- **Undergraduate academic studies Bachelor in Physics** – 4 years (240 ESPB)
- **Master academic studies in Physics** – 1 year (60 ESPB)