

# Eighty years of the Mathematical Institute of the Serbian Academy of Sciences and Arts

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## From post-war beginnings to a European research hub

In the spring of 1946, in a city still recovering from the devastation of the Second World War, a small group of mathematicians gathered in Belgrade with a bold idea: to rebuild scientific life almost from nothing. Libraries have been destroyed, research has nearly ceased, and academic institutions were struggling to resume their work. Yet from these fragile beginnings emerged one of the most important scientific institutions in Serbia – the Mathematical Institute of the Serbian Academy of Sciences and Arts (MISANU).

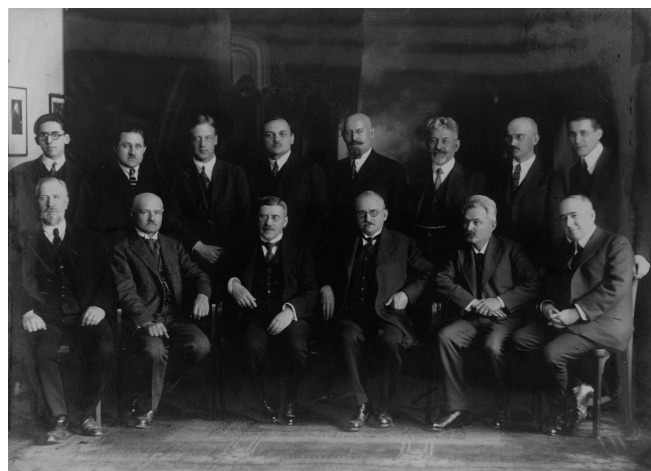
Eighty years later, the institute stands as a vibrant research centre, deeply integrated into the European mathematical community, while still preserving the spirit of its founding moment: the belief that mathematics is both a universal language and a cornerstone of intellectual and societal progress.

## Before 1946: Roots of a mathematical tradition

The story of the institute does not begin with its founding. Its roots lie in the gradual development of mathematical culture in Serbia during the 19th and early 20th centuries. Modern mathematical activity emerged through the work of scholars educated in leading European centres – Paris, Vienna, Berlin – who brought back both knowledge and academic standards.

By the early 20th century, Belgrade had developed a lively mathematical community. The informal “Club of Mathematicians” gathered university professors who exchanged ideas, presented research, and followed developments across Europe. In 1932, this circle launched *Publications Mathématiques de l’Université de Belgrade*, the first international mathematical journal in the country.

This promising development was abruptly interrupted by war. In 1944, much of the mathematical library was destroyed, and the continuity of scientific work was broken. The founding of the Mathematical Institute in 1946 was therefore not simply an institutional act – it was a deliberate effort to restore a lost scientific ecosystem.



Belgrade Mathematical School. Miloš Radojčić, Tadija Pejović, Vyacheslav Zhardetsky, Anton Bilimović, Petar Zajankovski, Jelenko Mihailović (seismologist), Radivoj Kašanin, Jovan Karamata (standing). Nikola Saltikov, Mihailo Petrović, Pavle Popović (rector), Bogdan Gavrilović, Vladimir K. Petković (dean of the Faculty of Philosophy), Milutin Milanković (seated). (Photograph by M. Savić, 1926; SASA Archives, 14197/16)

## Founding a scientific institution in difficult times

The Mathematical Institute was established in 1946 as the first scientific institute of the Serbian Academy of Sciences. Its founders – among them prominent mathematicians shaped by both domestic and international traditions – envisioned an institution that would gather researchers, rebuild scientific infrastructure, and reconnect Serbian mathematics with the wider world.

One of the defining challenges of the early years was not a lack of ideas, but a lack of people. Most of the founders were already in their later years, and the future depended on educating a new generation of mathematicians. The admission of the first young researchers in 1949 marked a turning point, initiating a process that would gradually shape a strong and interconnected mathematical community.



The palace of Serbian Academy of Sciences and Arts, which housed the Mathematical Institute SANU from 1952 to 2008. (Photograph by Jeremija Stanojević, c. 1930; Belgrade City Museum, UR/9527)

Rather than becoming a large institution with many permanent staff members, the institute developed a distinctive model: it functioned as a scientific hub. Many of its collaborators were university professors across Yugoslavia, while the institute provided essential infrastructure – seminars, publications, a library, and international contacts.

This model proved remarkably effective. Young mathematicians trained at the institute went on to establish departments and research centres in cities such as Novi Sad, Sarajevo, and Skopje, extending its influence far beyond its physical location.

### From classical mathematics to computing

In its early decades, research at the institute was dominated by classical areas such as mathematical analysis and mechanics. Over time, however, the scope of research expanded, following global trends in mathematics.

A decisive step toward modernization came in the late 1960s, when the institute established a computing centre equipped with an IBM 360/44, one of the most advanced computers of its time. In an era when computers occupied entire rooms and relied on punched cards, this machine opened new possibilities for complex calculations and interdisciplinary research.

Although the original computing centre was eventually discontinued due to high costs, its legacy was profound. It marked the beginning of the institute's long-standing engagement with computing, which today encompasses areas such as cryptography, machine learning, optimization, and blockchain technologies.

### Infrastructure of knowledge: library and archives

From its earliest days, the institute understood that scientific progress depends on access to knowledge. Its library, founded in 1946, grew from a modest collection into one of the most important repositories of mathematical literature in the region. Today it contains tens of thousands of volumes, including rare journals and monographs, and provides access to major international databases such as *MathSciNet* and *Zentralblatt*.

Complementing the library is the institute's archive – a rich and complex collection that documents both administrative history and scientific activity. It includes correspondence, project documentation, and records of international collaboration, offering invaluable insight into the development of mathematics in Serbia over more than eight decades.

Together, these resources form a bridge between past and present, preserving the intellectual heritage of the institute while supporting contemporary research.

### A networked institution

One of the most distinctive features of the Mathematical Institute has always been its openness. Even today, it functions not only as a physical institution but as a network that connects researchers across Serbia and beyond.

This networked character is reflected in its organizational structure. In recent decades, the institute has expanded its staff and established additional centres in Novi Sad and Niš, while continuing to rely on a broad circle of collaborators.

Research is organized into three main sectors – mathematics, computer science, and mechanics – each covering a wide range of topics, from abstract theory to applied problems. Weekly seminars, colloquia, and workshops remain central to the institute's intellectual life, fostering continuous exchange of ideas.

### International integration

From its founding, the institute has sought to maintain strong international connections.

Today, MISANU is an institutional member of the European Mathematical Society (EMS) and a member of ERCOM (European Research Centres on Mathematics), a network that brings together leading mathematical institutes across Europe.

Its researchers participate in major European programmes such as FP7 and Horizon 2020, and collaborate with institutions in more than 80 countries. International cooperation spans a wide range of activities – joint research projects, conferences, mobility programmes, and institutional partnerships.

These connections have not only enhanced the institute's visibility but also positioned it as an important bridge between regional and global mathematical communities.

### Science and society

Beyond research, the institute has played a leading role in the popularization of mathematics. One of its flagship initiatives is *May, Month of Mathematics* (M3), a nationwide programme launched in 2012 that attracts tens of thousands of participants each year through exhibitions, lectures, workshops, and public events.

The institute also actively supports young talent through educational programmes, competitions, and collaborations with schools and universities. Annual awards recognize outstanding student achievements, while outreach activities aim to make mathematics accessible to broader audiences.

These efforts reflect a broader vision: that mathematics is not only a specialized discipline but also a cultural and societal resource.

### Continuity and change

Over the course of eighty years, the Mathematical Institute has undergone profound transformations. It has evolved from a small post-war initiative into a modern research centre with global connections. Its fields of research have expanded, its infrastructure has developed, and its institutional role has grown.

Yet certain core elements have remained unchanged.

The institute continues to function as a meeting place – a space where ideas circulate, collaborations emerge, and generations of researchers are shaped. It remains committed to both fundamental research and its applications, to national development and international cooperation, to tradition and innovation.

### Looking forward

Today, the Mathematical Institute operates in a scientific world very different from that of 1946 – one defined by digital technologies, global networks, and interdisciplinary challenges. Yet the founding vision still resonates.

The institute's mission – to advance mathematical research, support young scientists, foster collaboration, and contribute to society – remains as relevant as ever.

As it enters its ninth decade, the Mathematical Institute of the Serbian Academy of Sciences and Arts stands not only as a witness to the history of mathematics in Serbia, but as an active participant in shaping its future.

From a war-torn city rebuilding its intellectual foundations to a node in the global network of mathematical research, the story of the Mathematical Institute is ultimately a story of continuity – proof that even in the most uncertain times, ideas can endure, connect, and grow into something lasting.

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