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## INTERNET PRESENTATIONS OF MATHEMATICAL WORKS IN SERBIA

**Abstract.** We describe Internet presentations of mathematical works in Serbia, which have been created as a result of several ongoing projects concerned with digitization of mathematics related content.

### 1 Introduction

As a result of several ongoing projects concerned with the digitization of mathematical works in Serbia, several Internet presentations have been created. There is a table with the most important ones below.

Virtual library of old mathematical works	<a href="http://elib.matf.bg.ac.yu:8080/virlib/">http://elib.matf.bg.ac.yu:8080/virlib/</a>
eLibrary of mathematical journals	<a href="http://elib.mi.sanu.ac.yu/">http://elib.mi.sanu.ac.yu/</a>
Retro-digitized journal Publications de l'Institut Mathematique	<a href="http://publication.mi.sanu.ac.yu/">http://publication.mi.sanu.ac.yu/</a>
Retro-digitized journal Publications of the Faculty of Electrical Engineering	<a href="http://pefmath2.etf.bg.ac.yu/">http://pefmath2.etf.bg.ac.yu/</a>
Visual Mathematics	<a href="http://www.mi.sanu.ac.yu/vismath/">http://www.mi.sanu.ac.yu/vismath/</a>

Digitized mathematical resources freely available on Internet

The rest of the paper will describe every presentation separately as follows. The presentation about virtual library has a whole section devoted to it, while the other presentations are grouped under a section about mathematical journals.

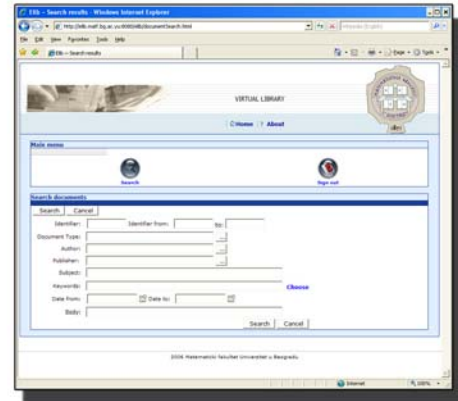
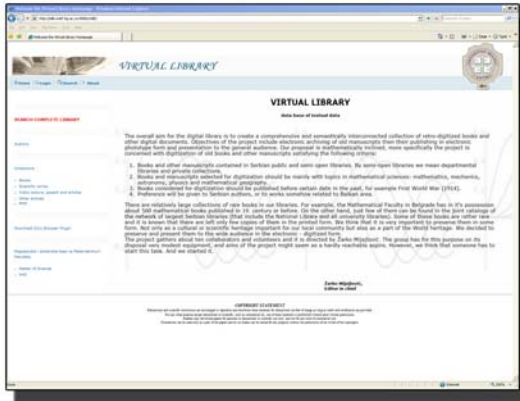
### 2 Virtual library

A virtual library is a digital library of mathematics-related books, theses and manuscripts. It has been developed as a comprehensive and semantically interconnected collection of the retro-digitized material satisfying some of the following criteria:

- Books and other manuscripts contained in Serbian public and semi-open libraries. By semi-open libraries we mean departmental libraries and private collections.
- Books and manuscripts selected for digitization should be mainly with topics in mathematical sciences: mathematics, mechanics, astronomy, physics and mathematical geography.

- Books considered for digitization should have been published before a certain date in the past, for example the Second World War.
- Preference will be given to Serbian authors, or to works somehow related to Balkan area.

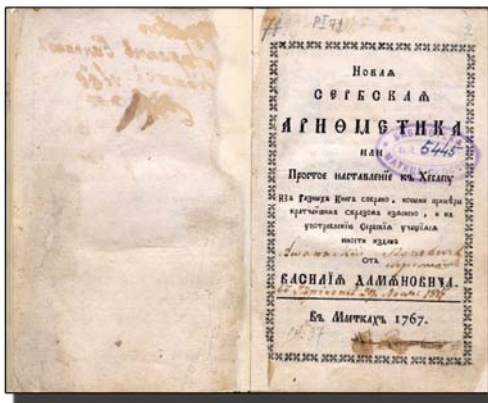
So far, more than 400 books, theses and manuscripts have been digitized and made available online. The last version of the corresponding presentation is given at the address <http://elib.matf.bg.ac.yu:8080/virlib/>.



Presentation of Virtual library

**2.1. Old books.** In our collection we have some very old and rare books, including first two books on mathematics written in Serbian language:

- Vasilije Damjanović, *Aritmetika*, Venice, 1767
- Jovan Došenović, *Čislenica*, Budim, 1809.



Covers of Aritmetika and Čislenica

These two textbooks are very elementary, and their authors did not tend to be original. They are, however, important for the cultural history of the Serbian people. For example *Čislenica* was the only printed textbook used at the Grand School in Belgrade, in the first state created by the Serbian Revolution at the beginning of the 19th century. Thus, it could be considered the first Serbian university textbook, because the Grand School may be and usually is taken as the forerunner of the University of Belgrade.

Beside these, we also have books by other Serbian mathematicians including famous Serbian scientist Milutin Milanković (including his celebrated work *Kanon Der Erdbestrahlung*, Beograd, 1941), Ruđer Bošković, etc.



Some Illustrations from digitized books

**2.2. Theses and manuscripts.** We have digitized all doctoral dissertations of Serbian mathematicians written before the First World War, including the oldest one:

- Dimitrije Danić, *Conforme Abbildung des eliptischen Paraboloids auf die Ebene*, Inaugural Dissertation der Philosoph. Fakultät zu Jena, printed in Belgrade, 1885.

Some of these theses were translated and whenever it was possible, the related documentation (biographies, archive materials, etc.) was also digitized and included in the presentation.



Thesis, cover of D. Danić dissertation, manuscripts

The same presentation contains 11 more or less recent (published and unpublished) doctoral and master theses defended at the Faculty of Mathematics in Belgrade [1]. The Council of the Faculty decided that all submitted theses must be given also in the digital form, so we expect that this part of the database will grow significantly in the next period.

Among the rest of available digitized articles and manuscripts, it is worth pointing out that we have collected papers of the prominent Serbian mathematician Bogdan Gavrilović (1864–1947) [3].

**2.3. Mathematical journals.** As Internet became more and more popular, in the year 2002 we decided to create an Internet database and the corresponding presentation of

freely accessible full-text mathematical journals. Currently, there are 6 journals with 109 volumes and more than 13000 pages and 1500 articles in the database:

- Bulletin, Classe des Sciences Mathématiques et Naturelles, Sciences mathématiques (6 volumes in English, from 2001)
- Matematički vesnik (32 volumes in English, from 1993)
- Kragujevac Journal of Mathematics (9 volumes in English, from 2000)
- Nastava matematike (32 volumes in Serbian, from 1992)
- The Teaching of Mathematics (19 volumes in English, from 1998)
- The Review of the National Center for Digitization (11 volumes in Serbian and English, from 2002).
- The last version of the corresponding presentation is given at the address <http://elib.mi.sanu.ac.yu/>.



Presentation of eLibrary

2.3.1. *Publications de l'Institut Mathématique*. This is the oldest (founded in 1932) and most important Serbian mathematical journal. Until the Second World War it was published by the Belgrade University, and afterwards by the Mathematical Institute. More than 2000 articles have appeared in almost 100 volumes. The scope of the journal in the beginning was broader, not only in mathematics, but articles referring to mechanics and astronomy were accepted in it as well. Almost every Serbian mathematician has published there at least one paper, as well as many world leading mathematicians (H. Lebesgue, P. Montel, W. Sierpinski, P. Erdős, S. Shelah, etc.).

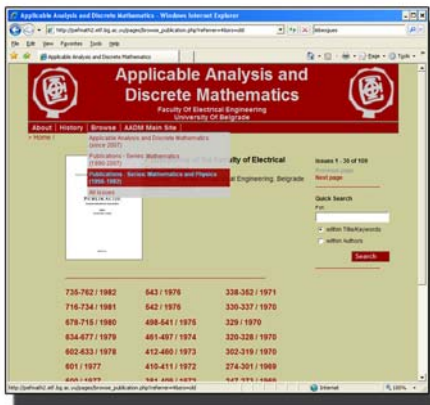
All volumes of the journal are available online, where they can be searched (both in English and Serbian) by authors' names, titles and key words. The last version of the presentation is given at the address <http://publication.mi.sanu.ac.yu/>.

2.3.2. *Publications of the Faculty of Electrical Engineering*. This journal was founded in 1956. More than 1000 articles have appeared in about 130 volumes. In the beginning, each contribution appeared separately bound and numbered consecutively, several times a year. Since 1959, the issues have been appearing collected in one or more volumes per year. In the first years, the journal had contributions from different fields apart from mathematics: physics, mechanics, and electrical engineering, but in the course of time, the journal focused almost exclusively on mathematics, especially convexity, functional equations and differential equations.



Presentation of Publication de l'Institut Mathématique

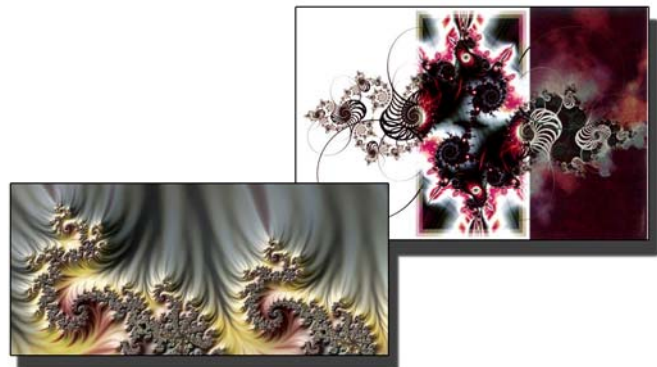
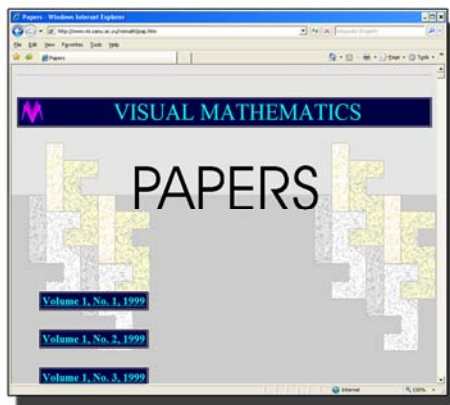
All volumes of the journal are available online, where they can be searched (both in English and Serbian) by authors' names, titles and key words. The last version of the presentation is given at the address <http://pefmath2.etf.bg.ac.yu/>.



Presentation of Publications of Faculty of Electrical Engineering

2.3.3. *Visual Mathematics*. Since 1999 Mathematical Institute publishes the journal Visual Mathematics with the goal to show the beauty of mathematics in a broad artistic-scientific context. It was one of the first journals appearing in digital form only.

All volumes of the journal and a lot of art galleries are available online. The last version of the presentation is given at the address <http://www.mi.sanu.ac.yu/vismath/>.



Presentation of Visual Mathematics

### 3 Conclusion

As it can be seen from this paper, the digitized mathematical resources are included into some databases and presented at different addresses. One of the first goals of the future work will be to unify that material so that it can be searched and presented from one location.

### References

- [1] Faculty of Mathematics, Belgrade, <http://www.matf.bg.ac.yu>
- [2] Mathematical Institute of Serbian Academy of sciences and Arts, <http://www.mi.sanu.ac.yu>
- [3] Ž. Mijajlović, editor. Compact disk *Collected works of Bogdan Gavrilović*. Mathematical Institute, Belgrade, 2001
- [4] Žarko Mijajlović, Zoran Ognjanović, *A survey of certain digitization projects in Serbia*, Proceedings of the Symposium Digital Preservation of Cultural Heritage, 16–17 September 2003, Borovetz, Bulgaria, Review of the National Center for Digitization 4, 52–61, 2004

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