

In anniversary of professor Alexander Solov'ev

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Abstract

Professor Alexander Dmitrievich Solov'ev (1927-2001), professor of Lomonosov Moscow State University, was one of the founders of reliability theory, author of the classical books, the nearest colleague of academic Boris Gnedenko. Aim of this short article - to mark 90-th birth anniversary of Alexander Solov'ev.

Key words: reliability theory, mathematical methods, Solov'ev



This issue of our journal is devoted to professor Alexander Dmitrievich Solov'ev (1927-2001), one of the founders of reliability theory. Specialists of reliability from many countries marked Alexander Solov'ev's 90-th birth anniversary by organization of International Conference on "Analytical and Computational Methods in Probability Theory and its Applications", held by Lomonosov Moscow State University and by RUDN university (information support- Gnedenko- Forum). Some participants of this Conference were pupils of prof. Solov'ev, and all participants know Solov'ev works very well. Reports at this conference are the main subject of this issue.

Alexander Solov'ev (below- AS) studied at the Mechanics and Mathematics faculty of Lomonosov Moscow State University and completed his studies in 1951. All of his creative life was connected with this faculty: the postgraduate education, teaching as a teaching assistant, an assistant professor from 1958 and a professor since 1975. His supervisor was professor A. O. Gelfond. AS defended his thesis in 1955; the topic of the dissertation was "The problem of moments for analytic functions". He had the outstanding analytical technique and phenomenal mastery of mathematical analysis.

Then AS changed the area of his interest - it became probabilistic theory by influenced by acad. Boris Gnedenko. AS was one of the first mathematician who began to create the mathematic basis of reliability theory. It was 1965 year when the book Mathematical methods in reliability theory (authors- B.Gnedenko, Yu. Belyaev, A.Solov'ev) was published. AS wrote in this book Chapter 2 "Reliability characteristics", Chapter 5 "Redundancy without restoration", Chapter 6 "Redundancy with restoration". This book was translated into many languages, became a classic for many generations of specialists around the all world. I think that every reliability specialist has this book

on his shelf. When I began to read this book for the first time, I thought that all problems in reliability theory had been decided and wasn't new activity in this science. But this opinion changed very quickly- I understood that this book would be a gate to reliability theory and a platform for future works.

AS defended his doctoral dissertation "Queuing systems with fast maintaining" in 1972. In 1979 AS together with B.V. Gnedenko, Yu.K. Beliaev, V.A.Kashtanov et al were awarded a State Premium for the work "Elaboration and implementation of the complex of methods for equipment high reliability assurance".

The book Problems of Mathematical Theory of Reliability, where AS was co-author together with B.V. Gnedenko, Yu.K. Beliaev, V.A.Kashtanov et al, was published in 1983. This book evolved the principles what were described in the past book Mathematical methods in reliability theory. AS wrote in new book part 1 "Analytical methods of reliability estimation". This part consisted: Chapter 1 "Reliability of elements", Chapter 2 "Limited theorems", Chapter 3 "Reliability of systems" and included: asymptotic exact double-side estimation creation, convergence to exponential distribution in some classes of random values, limited theorems for regenerative processes and their applications to different tasks of reliability.

AS's activity in reliability problems was very high- it was regular consulting for scientists and engineers in the Reliability Cabinet of Moscow Politechnic Museum, lectures in this Museum, which were published in a set of brochures, participation in seminars on mathematical theory of reliability in Lomonosov Moscow State University. The authority of AS was undisputable, people from different cities arrived to him. I don't know any case when someone didn't receive help from AS.

One of the new directions of AS's activity was history of mathematics (together with his wife Svetlana Petrova who was a professional historian of mathematics).

I'd like to add some personal information about my meetings with AS. I remember very well the day and place of my first acquaintance with him- 1970, October 2, Dilijan resort in the mountain part of Caucasia republic Armenia, rest home for composers. On this day School of queening theory under the leadership of academic Boris Gnedenko began. The School was organized by the Department of Probability Theory of Moscow State Lomonosov University by. Music was heard from open windows of composer cottages, it was wonderful harmony of mountains, mathematics and music. AS was one of the key people at this School.

Many young specialists in reliability and queues theory participated in this School: Alexander Andronov, Illia Gertsbah, Bojan Dimitrov, Victor Kashtanov, Mikhail Fedotkin, Volodymir Rykov, whose names are well-known now. Two weeks of this School was the start of future contacts between us for many years.

I had the good luck to sit in the restaurant during this School at the same table with AS: it wasn't only eating of very tasty national Armenian food, but it was feast of joy. AS was the center of attention- he told interesting stories, jokes; it was a theatre of one actor. We left AS only during the lessons and reports and playing football- our main type of rest.

My contacts with AS continued after Dilijan School. He reviewed my articles in the Journal "Proceedings of the USSR Academy of Sciences. Technical Cybernetics", we discussed different problems and stay in his hospitable home was a big pleasure for me. When I ended my doctoral dissertation "Operation Reliability of Industrial Control Systems" in 1974, academic Gnedenko

gave proposers me about the choose of opponents. He proposed AS, prof. Igor Ushakov and as necessary- a member of the Scientific Council at the place of defense (it was Kharkov Polytechnic University).

When I met AS and Ushakov at Kharkov Railway station, it was hard to recognize AS: instead of the long artistic hair he had simple short haircut. AS explained to me that he was afraid of a negative reaction of the conservative provincial scientific council to the bohemian appearance of a Moscow professor. I don't know he could repeat the same action. After defense around of friendly table at my home, AS of course was in the center of attraction to everyone, and especially the women.

I was very glad to see AS in my native city- Kharkov. AS twice reported at my seminars on reliability problems. First his report was devoted to asymptotic methods in reliability theory, second- optimal discipline of renewal systems maintenance. His reports collected full auditorium in Kharkov Technique House and there were a lot of questions and long discussion after his reports.

AS liked to go to Kharkov market, talked with saleswomen, chose the most tasty and fresh. After that we would go to my home and to the horror of my family AS came to the kitchen, dressed an apron and prepared the food himself according his own recipes. It was very tasty!

During one of my visit to AS, he in my presence received the letter from Riga from our colleague Iliia Gertsbakh. He wrote that soon he would leave USSR with his family and migrate to Israel. Immigration from USSR was an unusual decision for that time, connected with a lot of different and difficult troubles. AS read the letter with full understanding. I remembered very well one sentence from Gertsbakh's letter: "You are a good mensch, Alexander Dmitrievich". I think that all my colleagues who knew Alexander Dmitrievich Solov'ev agree with this statement.