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TO THE ANNIVERSARY OF SERGEI VLADIMIROVICH VOSTOKOV

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On April 13, 2015 Sergei Vladimirovich Vostokov, professor of the St. Petersburg State University, turned 70.

S. V. Vostokov graduated from the Mathematics and Mechanics Department of the Leningrad State University (LGU) in 1968, specializing in Algebra and Number Theory. In 1973 he received his Ph.D. degree for his thesis "Additive Galois modules of number fields" under the supervision of Z. I. Borewich, and in 1980 he received his Dr.Sci. degree for his thesis "Explicit reciprocity laws in algebraic number fields". Since 1982 Sergei Vladimirovich Vostokov has served as Professor of Algebra and Number Theory. His works are centered around the local aspects of modern number theory. In 2013 S. V. Vostokov was awarded the SPbSU Prize for scientific achievement, and in 2014 he was awarded the highest prize for mathematicians in St. Petersburg, the P. L. Chebyshev Prize.

The scientific interests of S. V. Vostokov were formed under the decisive infulence of the St. Petersburg algebraists Z. I. Borewich and D. K. Faddeev, as well as the outstanding Moscow mathematician I. R. Shafarevich. Inspired by the works by Shafarevich on algebraic number theory, S. V. Vostokov developed an interest in the local techniques, which became central in his scientific career. The most influential results by Vostokov concern the explicit formulas for Hilbert symbols, both for the multiplicative group and for formal groups, such as Lubin–Tate groups (and later for Honda groups). This work by S. V. Vostokov is closely related to Hilbert's ninth problem concerning explicit reciprocity laws. Developing some ideas of I. R. Shafarevich, in 1978 S. V. Vostokov established a remarkable explicit formula for Hilbert symbols. What makes his famous explicit formulas extremely important is the fact that they can be generalized naturally to the multidimensional local fields of mixed type. In the modern literature on the subject, his multiplicative formula and also its generalizations to the multidimensional fields are often called the Vostokov symbol. This symbol contains important arithmetic information and can be defined independently of the class field theory, the foundation of modern number theory. Thus, these explicit formulas can serve to establish many important results of number theory. Being both very beautiful and universal, Vostokov's formula belongs to the classics of number theory. The explicit formula, established by Vostokov himself, as well as its further modifications, played an essential role in several fundamental works on arithmetics, including those by A. Wiles, K. Kato, and M. Kurihara.

S. V. Vostokov published more than 100 scientific papers. His monograph on local fields (joint with I. B. Fesenko) was published by the American Mathematical Society in 1993. It got a broad recognition, and the AMS suggested the expanded second edition in 2002. The feature of this book is an extremely explicit and specific description of the key objects and statements of local number theory. This monograph became an indispensable desk book for many number theorists. It also became popular in other mathematical communities, including mathematical physics and algebraic topology.

Sergei Vladimirovich Vostokov combines scientific leadership and mastery of exposition with personal charm, attention, and respect towards colleagues, Ph.D. students, and former students who started their own track in science. As a scientific advisor, Sergei Vladimirovich is characterized by the deep personal relations with his students. S. V. Vostokov is the founder and the head of the famous St. Petersburg local number theory school. Among his direct disciples, one could mention V. Edemskiĭ, I. Fesenko, D. Benois, I. Zhukov, A. Madunts, P. Vinnik, A. Gurevich, M. Bondarko, O. Demchenko, A. Zinoviev, T. Belyaeva, N. Durov, M. Ivanov, and S. Afanas′eva. Some of his students received St. Petersburg Mathematical Society awards. Three of S. V. Vostokov's received the Dr.Sci. degree. The total number of his direct students and the students of his students who received Ph.D. degrees exceeds 35.

From 1994 to 1999 S. V. Vostokov was a member of the "Arbeitsgruppe" in Berlin, associated with the Max Planck Institute in Bonn. Between 1998 and 2015 he organized several important international scientific conferences in number theory at the Euler Institute in St. Petersburg, which were attended by more than 80 of the leading world mathematicians.

In the 1960s S. V. Vostokov was one of the first organizers and teachers of the Mathematical Summer School at the Leningrad State University. For many decades, he actively participated in the work of the St. Petersburg boarding school with special training in mathematics and physics. Influenced by his advanced courses in number theory, some of the graduates of that school later became Ph.D. students of Sergei Vladimirovich.

S. V. Vostokov has been the President of the Leonhard Euler International Foundation since its creation in 2006. The mission of the foundation is to support mathematics, and it has achieved much in supporting research mathematicians, teachers of mathematics, students and schoolchildren interested in mathematics. In particular, under the guidance of S. V. Vostokov, and with his active participation since 2007, the foundation organizes Mathematics Olympiads for schoolteachers of mathematics, as well as yearly seminars for schoolchildren and teachers of St. Petersburg and Northwest Russia. Since 2007 S. V. Vostokov has been the director of the Internet School "Unichance".

Dear Sergei Vladimirovich, we cordially congratulate you on the anniversary! We wish you harmony and peace of mind, good health, family well-being, and further spectacular success in science, teaching, and community service.