In Memoriam[1]

Blagovest Sendov

February 8, 1932 – January 19, 2020

Blagovest Hristov Sendov was born on February 8, 1932 in Asenovgrad, Bulgaria. From very early age Sendov showed an exceptional talent for mathematics. His strong desire to study mathematics at the Sofia University however could not be realized immediately. Being from a bourgeois family he was not allowed to study at the University. The communist system in Bulgaria at that

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time did not let young people of unreliable bourgeois background to higher education. With his typical perseverance and creativity he manage to overcome this first serious obstacle in his life. After being a laborer for three years, cleaning the streets in Sofia, he was admitted to Sofia University. Bl. Sendov graduated from the Department of Mathematics at Sofia University in 1956 (a year earlier than his classmates). Immediately after that he was admitted as a graduate student in the same department, but again for political reasons he was not allowed to continue his education. He had to work as a teacher for two years. With the very strong support of the mathematics professors (most importantly Prof. N. Obreshkov) Bl. Sendov was appointed in 1958 as an assistant professor in the Department of Mathematics.

With his enormous energy, perseverance, strong will and ingenuity Bl. Sendov succeeded in developing a brilliant professional career. He was promoted to associate professor in 1963 and to full professor 1968. In 1964 he was awarded a Ph.D. from the Moscow State University and in 1967 he received his Second Doctoral Degree. In 1974 Bl. Sendov was elected Corresponding member of the Bulgarian Academy of Sciences (BAS) and in 1981 he was already a Member of the BAS.

Sendov's administrative and political carrier was also extraordinary. During the period 1970–1973 he was Dean of the Department of Mathematics, Sofia University, and Rector of Sofia University during the period 1973–1979. In 1980–1982 he was Vice-President of the BAS and Vice-President and Secretary General of the BAS during the period 1982–1988. From 1988 through 1991 Bl. Sendov was President of the BAS. During the period 1991–1993 he was Director of the Center for Informatics and Computer Technology at the BAS. Bl. Sendov was President of the Bulgarian Parliament (1995–1997) and Vice-President of the Bulgarian Parliament (1997–2000). He was the Bulgarian ambassador to Japan during the period 2003–2009.

Bl. Sendov was widely recognized internationally. He was elected Honorary Doctor of the Moscow State University in 1977, Foreign member of the Ukrainian National Academy of Sciences in 1998, Honorary member of the International Higher Education Academy of Sciences in 1998, and Foreign member of the Serbian Academy of Sciences in 2000. Bl. Sendov was actively involved in several international organizations. During the period 1980–1985 he was Vice-President and/or Acting President of the International Association of Universities (IAU) and Honorary President of IAU thereafter. During the period 1989–1992 he was President of the International Federation for Information Processing (IFIP) and Honorary President of IFIP since 1993.

A high point in Sendov's carrier was his role in the reorganization of the university education and modernization of the mathematics research organization in Bulgaria in the 1970's. As Dean of the Mathematics Department and Rector of Sofia University Bl. Sendov along with Ljubomir Iliev was instrumental in the creation of the Center of Mathematics and Mechanics, a joint venture of Sofia University and the Bulgarian Academy of Sciences. The main purpose of the Center was to modernize and strengthen the mathematics university educa-

tion and integrate it with the research in mathematics. Bl. Sendov had also a big impact on the middle and high school education in Bulgaria by introducing and implementing his modern computer based educational system.

Very early on Bl. Sendov clearly understood the importance of the newly developed computers and computer science. The Institute of Mathematics organized and hosted the first computing Center in Bulgaria and the era of the computers and information technologies found their way in Bulgaria. This new era needed new generation of scientists and proper organization. Sendov epitomized the vision of the new horizons and the need of new organization in science including mathematics.

Bl. Sendov was a strong proponent of the development of Computational mathematics in Bulgaria. As Dean of the Department of Mathematics he introduced a new qualification/specialization in Applied mathematics. For the needs of the newly minted specialization Bl. Sendov developed and taught the first course on "Numerical Analysis" in the academic year 1959/1960. In those years of early development of the computer industry Sendov played a prominent role in the Bulgarian computer science community. He was founder and first head of the section "Operations research", 1970, and "Mathematical Modeling", 1973, at the Center of Mathematics and Mechanics. Bl. Sendov also pioneered the application of Mathematical modeling in Biology and Medicine.

Bulgarian Group in Approximation Theory, Sofia, 1982

(left to right)
front row: T. Boyanov, B. Bojanov, Bl. Sendov, M. Nikolcheva, and K. Ivanov
back row: A. Andreev, V. Popov, P. Petrushev, S. Tashev, V. Hristov, and G. Iliev

A critical role in shaping Sendov's research interests played his specialization at the Moscow State University in 1960, where he attended the seminars of A. Kolmogorov, S. M. Nikolski and S. B. Stechkin. His research interests were profoundly influenced by A. Kolmogorov. At that time Bl. Sendov began his work in Approximation theory. He invested a great deal of time and efforts in developing the theory of approximation in Hausdorff metric. Upon his return from Moscow Bl. Sendov started a weekly seminar in Approximation theory, where the Bulgarian school in Approximation theory was created with Bl. Sendov being its founding father. In the vibrant atmosphere of these seminars many new results were presented and new problems and ideas were posed and discussed. Several talented students of Bl. Sendov made there first steps while participating in the Approximation theory seminar, among them was his most brilliant student – Vasil A. Popov. Visitors from all over the world had given talks at Sendov's seminar. Sendov's mathematics Tuesdays were memorable extensions of his seminar. Almost every Tuesday evening mathematicians from Sendov's circle and others (many visitors) frequented restaurant "Bulgaria" in Sofia, where the latest news and mathematics problems were discussed over a glass of wine or a mug of beer. There was a lot of enthusiasm and excitement at that time. A principle reference for the theory of approximation in Hausdorff metric is the monograph of Bl. Sendov, "Hausdorff approximations", Kluwer Acad. Publ., 1990. As a natural progression of the studies on approximation in Hausdorff metric Bl. Sendov and his students developed the so called averaged moduli of smoothness and their applications. This line of research resulted in the monograph "Averaged muduli of smoothness", written by Bl. Sendov and V. Popov and published by MIR, Moscow (in Russian) and by John Wiley&Sons, New York (in English) in 1988. A notable episode in Sendov's research activities was his contribution to the Whitney constant. For more details of this achievement we refer the reader to the reminiscences of Peter Binev[2]. Bl. Sendov is probably most famous with his conjecture about the zeros of polynomials and their derivatives in the complex plane. There are more than 100 publications related to this conjecture and it is still unsolved. For more detailed account of Sendov's conjecture see the reminiscences below[2].

Kamen Ivanov
Pencho Petrushev

[2]Reminiscences of Blagovest Sendov by colleagues, friends, and students and List of Publications of Blagovest Sendov can also be found in *Journal of Approximation Theory* **254** (2020) 105406.