# Aleksandar Ivić (1949–2020)



It was a commonly known regular occurrence, almost on the dot, that every year around the 22nd of December, friends and colleagues of Aleksandar Ivić would receive his greetings wishing them Merry Christmas and Happy New Year. That was not quite the case last year, in the December of 2020, which was indeed unusual and very surprising, as if there was a clock malfunction. It was only a little afterwards that one learnt that this unusual absence of not receiving his greetings was because Aleksandar, as he was known to his friends, was seriously unwell during that period and journeyed to the painless world on 27th December, 2020, after a long illness.

The news of his unexpected passing away was received with shock and sadness by the academic community and all those who knew him from close. Being a close friend of its founding editors, the Hardy Ramanujan Journal, in particular, was very fortunate to have his warm association right from its inception. He enriched the journal by contributing his works, reviewing articles and, in the recent years, even donning an active role as a member of the Editorial Board. We deeply mourn the loss of this kind and ever helpful soul, who offered so much to the progress of the journal, especially during the past ten years after the passing away of K. Ramachandra.

Aleksandar Ivić was born on March 6, 1949 in a family of renowned linguists Parle and Milka Ivić. He completed his primary and secondary education in Novi Sad – the second largest city in Serbia, lying on the banks of the river Danube, and the capital of the autonomous province of Vojvodina. He continued his college education at the University of Novi Sad. At age 18, he participated in the International Mathematical Olympiad. He received his MSc and PhD degrees at the Faculty of Sciences of the University of Belgrade in 1973 and 1975 respectively. His doctoral thesis *On Certain Classes of Arithmetic Functions Related*

*to the Prime Counting* was written under the supervision of Đuro Kurepa from the University of Belgrade. He worked as full professor in the Faculty of Mining and Geology, University of Belgrade and became Professor Emeritus in 2014.

Aleksandar made fundamental contributions to analytic number theory. He extensively worked on topics like power moments of the Riemann zeta-function, divisor function in the critical line – sometimes in short intervals, error term for the fourth power moment of the Riemann zeta-function, gaps between consecutive zeros of the Riemann zeta-function on the critical line, large values of error term in the divisor problem, moments of the Hecke series at central points, sums of Fourier coefficients in the short intervals, on the integral and Mellin transforms of powers of Hardy's function, on the number of non-isomorphic abelian groups of certain order, on powerful numbers, on reciprocals of certain large additive functions and many other important problems.

He is also the author of a number of important books. The book *The Riemann Zeta-Function: Theory and Applications* first published by John Wiley & Sons Inc., New York in 1985 and later reprinted by Dover publications, New York in 2003 is an indispensable masterpiece which anyone interested in analytic number theory would like to own. This book is a great help to students and teachers alike in understanding the intricate analytic properties of the Riemann zeta-function and its relation to other number theoretic problems. This particular book alone is enough to keep Aleksandar Ivić's name alive for a long long time. Among the other books written by him is the *Lectures on mean-values of the Riemann zeta-function*, published by Tata Institute of Fundamental Research, Mumbai. Together with J-.M. De Koninck, he wrote a book titled *Topics in arithmetical functions, Asymptotic formulae for sums of reciprocals of arithmetical functions and related results*, published by North-Holland Publishing Co. More recently, his work and lectures on Hardy's function became a book with the title *The theory of Hardy's Z-function*, published by the Cambridge University Press in 2013. Besides motivating students and researchers understand and appreciate the beauty of the subject, these books have certainly enriched the literature in the field.

A glance at Mathscinet reveals that Aleksandar has collaborated with mathematicians from all over the world and has written over 200 research papers published in reputed international journals.

His passing away is indeed a great loss for analytic number theory; even more for those of us involved with the publication of the Hardy Ramanujan Journal who enjoyed his support and services throughout. We express our heartfelt gratitude to the departed soul, and share our grief with the bereaved family, his wife Mrs. Sanda and children, daughter Ana and sons Drazen and Jovan.



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