

Obituary

On behalf of the Editorial Board: Oleg Iliev and Svetozar Margenov

In Memoriam of Raytcho Lazarov

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It is with great sadness that we announce that on November 30, 2024, left us our colleague and dear friend Raytcho Lazarov, a Bulgarian and US mathematician, professor emeritus at Texas A&M University, and professor emeritus at the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences. Raytcho was born on January 23, 1943. He earned his M.Sc. in mathematics from Wroclaw University, Poland, in 1966, and Ph.D. in physics and mathematics from Moscow State University, USSR, in 1972. In 1982 he got the highest research degree, Doctor of Science, D.Sc. in applied mathematics from Sofia University, Bulgaria. He worked till 1991 in Bulgarian Academy of Sciences, taking leading positions as Head of the Laboratory on Numerical Methods in the Institute of Mathematics (1985-1981), Deputy-Director of the Center for Informatics and Computer Technology, BAS, 1986-1988. During his time at the Institute of Mathematics and Informatics, Raytcho Lazarov established a worldwide recognized group on Numerical Methods.

In 1991–1993 he was Professor of Mathematics in University of Wyoming, and since 1992 till his retirement in 2022 he was Professor in Mathematics in Texas A&M University, where, together with the numerical analysis

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group, he was leading the development of the numerical analysis in several fields. He was an internationally recognized scientist, and enjoyed a number of visiting positions during the years, starting with one year stay in Rutherford Laboratory, Didcot, UK, in 1976, and followed by numerous invited positions and invited visits all over the world. As for Raytcho's research contributions, he began his research career analyzing finite difference schemes for elasticity equation. During the years he has done remarkable contributions to the fields of finite element method, finite volume method and finite difference methods for PDEs and systems of PDEs. His works on unified hybridization of discontinuous Galerkin, mixed, and continuous Galerkin methods for second order elliptic problems, on first-order system least squares for second-order partial differential equations, on finite volume methods for convection-diffusion problems, discretization techniques and solvers for multiscale problems, and others are of great importance, fundamental, and highly cited. In the last decade Raytcho was also significantly contributing to numerical methods for problems involving fractional order differential operators. For a short time his works on an the L1 scheme for the subdiffusion equation with nonsmooth data, on error estimates for a semidiscrete finite element method for fractional order parabolic equations, on Galerkin finite element method for a multi-term time-fractional diffusion equation, on schemes for fractional diffusion and diffusion-wave equations with nonsmooth data, on rational approximations of fractional Laplacian got a hundreds of citations indicating the influence they have on the research in this area. Although his last published paper is dated 2020, each consequent year, including 2024, he got more than 500 citations per year.

Raytcho supervised 21 PhD students, he hosted numerous postdocs and visitors. Many of his Ph.D. students, postdocs, and visitors become well-known researchers in their fields.

Raytcho was very actively involved in the academic life of our community. He served as Editor in Numerical Methods for PDEs, the Journal on Numerical Mathematics, SIAM Journal on Numerical Analysis. He played a remarkable role in establishing CMAM as a highly ranked journal in the area of Computational Methods in Applied Mathematics, serving 15 years as Editor, and dedicating a lot of efforts and time to the journal.

Raytcho has been honored with many awards, including the BAS Badge of Honor "Marin Drinov" on a Ribbon (2013), Dr. Honoris Causa of the University of Sofia (2006), IMI Medal at the BAS (2008).

His rich scientific heritage will contribute to the development of major branches in applied mathematics for many years to come – and beyond.

Raytcho was an exceptional person, great scientist, devoted husband, father and grandfather, loved and appreciated by his colleagues and friends. He will be deeply missed by the computational mathematics community.