

# Rolf Dieter Grigorieff

## Applications of Functional Analysis

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This issue contains several papers dedicated to the seventyfifth anniversary of Rolf Dieter Grigorieff. Rolf Dieter Grigorieff is not only a remarkable scientist who significantly contributed to numerical mathematics during the past decades, but also an outstanding scholar whom the authors of these notes owe a lot due to his encouraging and stimulating scientific guidance.

Rolf Dieter Grigorieff was born on October 7, 1938 in Berlin. He studied physics at the University of Technology in Berlin where he received his diploma in 1965. He continued to study mathematics at the Johann Wolfgang Goethe-University in Frankfurt/Main under the guidance of Friedrich Stummel and achieved his PhD in 1967 with a dissertation on the coercivity of linear elliptic difference operators under general boundary conditions. His academic ancestry can be traced back to David Hilbert. Indeed, he is an academic grandson of Franz Rellich who is the academic son of Richard Courant whose academic father is David Hilbert. After his graduation, he spent five years as a research and teaching assistant at the Chair of Applied and Instrumental Mathematics at the Johann Wolfgang Goethe-University. In 1970, he achieved his habilitation with a thesis entitled “Verallgemeinerte approximativ kompakte Operatoren und Anwendungen” (“Generalized approximatively compact operators and applications”).

After his habilitation, Rolf Dieter Grigorieff spent several months as Assistance Professor at the Institute of Mathematics at the Johann Wolfgang Goethe-University, before he accepted a position as Associate Professor at the University of Technology in Darmstadt. Only a year later, he became a Full Professor at the University of Technology in Berlin.

During the first years in Berlin, Rolf Dieter Grigorieff continued to work on the theory and applications of discrete convergence in discrete limit spaces, a field that he had initiated together with his academic advisor Friedrich Stummel and which provides an elegant abstract framework for the investigation of approximation schemes for almost any kind of operator equations. One particular focus was on eigenvalue problems, later also on minimization problems, see, e.g., [8–11, 13, 14, 21].

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Besides discrete convergence and discrete approximation, Rolf Dieter Grigorieff's scientific work concentrated on the analysis of algorithms for the numerical integration of initial- and boundary-value problems for systems of ordinary differential equations best reflected by two monographs on the numerics of ordinary differential equations published by Teubner in 1972 and 1977, see [12, 20]. One main topic of his work then was the stability of multistep methods on variable grids for solving initial-value problems, see, e.g., [4, 19, 22], with the famous results on the zero-stability of the backward differentiation formulas, see [3, 15].

Later on Rolf Dieter Grigorieff studied the convergence and supraconvergence of finite difference methods on nonuniform grids as well as of Petrov–Galerkin methods with quadrature for solving elliptic boundary-value problems, see, e.g., [2, 5–7, 16, 23]. Another focus of his recent research is on the quallocation method and on splines with multiple knots and their application for solving boundary integral equations, see, e.g., [1, 17, 18, 24, 25].

Rolf Dieter Grigorieff's work has been highly esteemed by the international scientific community. During his academic career, he received offers for full professorships from the University of Erlangen–Nürnberg and the University of Nijmegen which he all declined and decided to stay faithfully with his Alma Mater.

Rolf Dieter Grigorieff is not only a brilliant scientist, but also an admirable scholar. He supervised more than ten PhD theses. His scholarly qualities are reflected by the fact that some of his PhD students nowadays hold positions as professors at universities in Germany and in the US.

Rolf Dieter Grigorieff retired in March 2007, but kept active scientifically after his retirement. We are sure that he will continue to inspire numerical mathematics as much as he did in the past. We wish him all the best for the years to come.

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