

CURRICULUM VITAE

Name: Karel Segeth

Position title: Senior Research Scientist

Date and place of birth: May 10, 1943

Research interests:

The area of my scientific interest can be characterized as solving problems of mathematical physics and numerical modeling physical phenomena. My professional career was specifically connected with solving partial differential equations and estimating the error of the numerical solution. I have published a lot of papers, a monograph (with co-authors), and a chapter in a monograph in the field of theoretical computational mathematics, mostly concerned with solving parabolic partial differential equations by the finite element method combined with the method of lines. Moreover, I was interested also in various applications of these numerical processes in modeling multidimensional data in physics, archaeology, geophysics, and biology.

Education and professional development:

Charles University in Prague, M.S., 1964, Mathematics

Charles University in Prague, RNDr., 1969, Approximate and Numerical Methods

Mathematical Institute of the Czechoslovak Academy of Sciences, PhD, 1972, Approximate and Numerical Methods (mentor: Ivo Babuška)

Charles University in Prague, Associate Professor, 1996, Approximate and Numerical Methods

University of West Bohemia in Pilsen, Professor, 2004, Applied Mathematics

Employment:

1964–1972 Research Assistant, Mathematical Institute of the Czechoslovak Academy of Sciences, Prague

1972–1977 Research Scientist, Mathematical Institute of the Czechoslovak Academy of Sciences, Prague

1977– Senior Research Scientist, Institute of Mathematics, Academy of Sciences of the Czech Republic, Prague

1996–2004 Director, Institute of Mathematics, Academy of Sciences of the Czech Republic, Prague

2004–2010 Professor and Chair of the Department of Mathematics, Technical University of Liberec

Research Support in the last 15 years:

Czech Science Foundation 201/01/1200, K. Segeth (Principal Investigator), 2001–2003, Mathematical and numerical modeling of nonlinear physical fields

Czech Science Foundation 201/04/1503, K. Segeth (Principal Investigator), 2004–2006, Mathematical and numerical analysis of nonlinear boundary value problems

Czech-U.S. Agreement on Research, Ministry of Education of the Czech Republic 1P05ME749, M. Křížek (Principal Investigator), 2005–2008, Fermat numbers and their applications, Role: Co-Investigator

Ministry of Education of the Czech Republic 1M0554, J. Maryška (Principal Investigator), 2005–2011, Research Center Advanced Remediation: Technologies and Processes, Role: Co-Investigator

Grant Agency of the Academy of Sciences of the Czech Republic IAA 100190803, M. Křížek (Principal Investigator), 2007–2011, Finite element method for higher dimensional problems, Role: Co-Investigator

Czech Science Foundation 14-02067S, V. Kolář (Principal Investigator), 2014–2016, Advanced methods for flow-field analysis, Role: Co-Investigator

Teaching experience:

I read lectures on computational mathematics and computer programming for bachelor as well as master students at Charles University in Prague, Czech Technical University in Prague, University of West Bohemia in Pilsen, and Technical University of Liberec. I also wrote university texts for some of these lectures. Four of my PhD students have received their degree.

Some lectures at international conferences:

On the advantages and drawbacks of a posteriori error estimation for fourth order elliptic problems, ECCOMAS Thematic Conference on Computational Analysis and Optimization, Jyväskylä, Finland, June 2011

Smooth approximation of data with applications to interpolating and smoothing, Programs and Algorithms of Numerical Mathematics 16, Dolní Maxov, Czech Republic, June 2012

A periodic basis system of the smooth interpolation space, 4th European Seminar on Computing, Pilsen, Czech Republic, June 2014

Some stays abroad:

1966 Academy of Sciences of U.S.S.R., Kyiv, U.S.S.R., 1 month

1966 Academy of Sciences of U.S.S.R., Novosibirsk, Moscow, U.S.S.R., 1 month

1969–1970 University of Maryland, College Park, MD, U.S.A., 1 year

1973 Academy of Sciences of U.S.S.R., Novosibirsk, U.S.S.R., 2 weeks
1980 Rheinisches Landesmuseum, Bonn, Germany, 2 weeks
1982 Rheinisches Landesmuseum, Bonn, Germany, 1 month
1984 Rheinisches Landesmuseum, Bonn, Germany, 1 month
1985 University of Luleå, Sweden, 2 weeks
1987 Rheinisches Landesmuseum, Bonn, Germany, 1 month
1989 Rheinisches Amt für Bodendenkmalpflege, Bonn, Germany, 1 month
1990 Universidad Politecnica, Madrid, Spain, 2 weeks
1991 Rheinisches Amt für Bodendenkmalpflege, Bonn, Germany, 1 month
1992 University of Maryland, College Park, MD, U.S.A., 2 weeks
1994 Texas A&M University, College Station, TX, U.S.A., 2 weeks
1998 University of Texas at Austin, TX, U.S.A., 1 month
2000 Keio University, Yokohama, Japan, 2 weeks
2001 University of Texas at Austin, TX, U.S.A., 3 weeks
2003 Flinders University, Adelaide, SA, Australia, 2 weeks
2005 University of Texas at Austin, TX, U.S.A., 1 month
2008 Johannes Kepler Universität, Linz, Austria, 2 weeks
2012 Wayne State University, Detroit, MI, University of Texas at Austin,
TX, State University of New York, U.S.A., 2 weeks

Service for the community:

1983– Member, Organizing Committee of the series of biannual seminars
Programs and Algorithms of Numerical Mathematics and Editorial Board of
the Proceedings

1994– Member, Committee for Awarding Babuška’s Prize for Young Sci-
entists in Computational Mechanics and Computational Mathematics

1996– Member, Scientific Board of the University of West Bohemia in
Pilsen

2014– Member, Editorial Board of journal Neural Network World

Reviewer for Zentralblatt MATH and many other scientific journals in
the field of mathematics

Professional memberships:

1996–2006 Member, Union of Czech Mathematicians and Physicists

2006– Distinguished Member, Union of Czech Mathematicians and Physi-
cists

Honors:

2003 Honorary Medal of the Faculty of Mathematics and Physics of
Charles University in Prague

2013 Honorary Medal of the Czech Mathematical Society