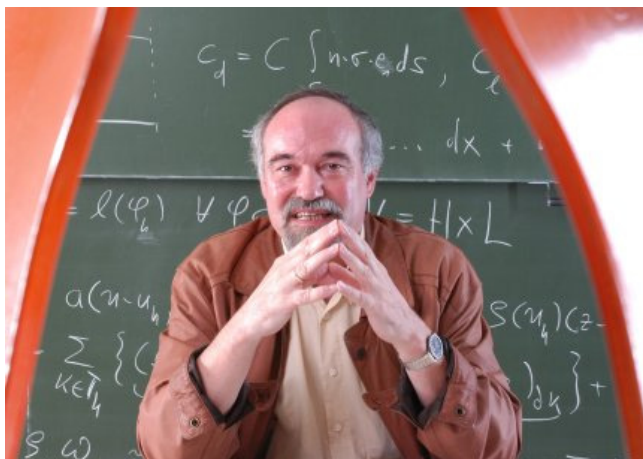


Preface



This issue is dedicated to the 60th anniversary of Professor Rolf Rannacher

Rolf Rannacher is not only an outstanding scientist who significantly influenced the development of applied and numerical mathematics during the past thirty years, but also a good friend who — as a member of the editorial board — accompanied the *Journal of Numerical Mathematics* from its very beginning when it was still called the *East–West Journal of Numerical Mathematics*.

Rolf Rannacher was born on June 10, 1948, in Leipzig, Germany. He studied mathematics and physics at the University of Frankfurt/Main where he received his PhD in 1974 under the guidance of Friedrich Stummel. 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 Institute of Applied Mathematics, University of Bonn. In 1978, he achieved his habilitation under the supervision of Jens Frehse. It was the time when there was a strong competition on optimal *a priori* estimates of the global discretization error in the L^∞ -norm for standard P1 conforming finite element approximations of elliptic boundary value problems. Together with his supervisor Jens Frehse, Rolf Rannacher significantly contributed to this area which over the years remained one of the many cornerstones of his scientific opus. Just recently, in joint work with one of his latest PhD students, Boris Vexler, he provided an excellent *a priori* error analysis of space–time discretizations of optimally controlled parabolic initial-boundary value problems.

After his habilitation, Rolf Rannacher spent one year as Visiting Associate Professor at the Department of Mathematics, University of Michigan, before he accepted a position as Associate Professor of Applied Mathematics at the University of Erlangen–Nuremberg in 1980. Only three years later, he became a Full Professor of Applied Mathematics at the University of Saarbrücken where he stayed for five years. During his stay in Erlangen and Saarbrücken, Rolf Rannacher was concerned with the investigation of finite element methods (FEM) for elliptic and parabolic problems with singular data. These years also mark the beginning of a long-lasting and fruitful cooperation with J. G. Heywood on efficient and robust numerical methods for problems in mathematical fluid mechanics. A further highlight of the Saarbrücken days and another cornerstone of his scientific work is his joint work with Heribert Blum on asymptotic error expansions and Richardson extrapolation for FEM. Years later, his first paper in the East–West Journal of Numerical Mathematics was on the application of these techniques to streamline diffusion FEM.

After declining offers from the University of Technology in Darmstadt and from the University of Zurich, in 1988 Rolf Rannacher accepted an offer from the University of Heidelberg and became Full Professor at the Institute of Applied Mathematics and member of the Extended Board of Directors of the Interdisciplinary Center for Scientific Computing. In Heidelberg, Rolf Rannacher served as Chairman and Deputy Chairman of two Graduate Schools and as the Chairman of the legendary Collaborative Research Center SFB 359 on ‘*Reactive Flow, Diffusion, and Transport*’. His research activities within the Collaborative Research Center focused on the numerical simulation of processes describing viscous flows with material transport and chemical reactions, of large-scale chemical reaction systems, and of material transport processes in astrophysics.

During the early years in Heidelberg, another research area emerged which should become a further cornerstone in Rolf Rannacher’s scientific work. In cooperation with Claes Johnson, Endre Süli, and others he began to work on adaptive FEM based on the goal-oriented dual weighted approach. In particular, he and his collaborators were the pioneers in applying this methodology to optimal control problems for partial differential equations.

Rolf Rannacher is not only a brilliant scientist, but also an outstanding scholar. He supervised more than thirty PhD theses. His excellent scholarly qualities are reflected by the fact that more than ten of his PhD students nowadays hold positions as professors at renowned universities in China, France, Germany, and in the US.

His records in the academic service are equally remarkable. He belongs to the editorial board of leading journals and to scientific and program committees of conference and workshop series in his field of expertise. At his university, he currently serves as the Dean of the College of Mathematics and Computer Science.

We are sure that Rolf Rannacher will continue to inspire applied and numerical mathematics and to serve our community as much as he did in the past. We wish him all the best for the years to come.

Ronald H. W. Hoppe

Yuri A. Kuznetsov