Obituary on Prof. Andreas Griewank Ph.D.

 On 16 September 2021, our friend and colleague Andreas Griewank passed away suddenly and unexpectedly at the age of 71. We mourn the loss of an outstanding, internationally recognized mathematician, who shaped modern-day optimization by developing algorithmic differentiation.

Andreas Griewank was born in Kassel on 26 January 1950. After he finished high school at the "Albert-Schweitzer-Gymnasium" in Hofgeismar in 1968, he started studying mathematics and physics at the Technische Universität in Clausthal-Zellerfeld. In 1972 he moved to Freiburg, where he studied mathematics, physics and economics at the Albert-Ludwigs-Universität. He graduated with disctinction in 1975, having written his diploma thesis about affine linear automata (*Affin-lineare Automaten)* under Lutz Eichner. Afterwards he moved to the Computer Centre and Department of Computer Science at the Australian National University in Canberra. There, he completed his master's degree with a thesis on *A Generalized Descent Method for Global Optimization.* He stayed in Canberra for his doctorate, supervised by R.P. Brent and M.R. Osborne. Andreas Griewank received his PhD in 1980 with a dissertation on the *Analysis and Modification of Newton's Method at Singularities*.

Following his PhD, Andreas Griewank worked as a postdoc with Michael J. D. Powell at the University of Cambridge. In 1982, he became Assistant Professor at the Southern Methodist University in Dallas, USA, where he was made (tenured) Associate Professor in 1986. From 1987-1993 he worked as Senior Mathematician at Argonne National Laboratory in Illinois, USA. In 1993, he accepted a professorship at TU Dresden and at the same time became director of the Institute for Scientific Computing there. He spent a sabbatical at INRIA in France in 1998-1999 and after two additional years at TU Dresden, Andreas Griewank accepted the offer of a Matheon professorship at Humboldt-Universität zu Berlin in 2003. From 2008 to 2012, he was director of the Institute of Mathematics at HU Berlin. After his retirement in 2015, he committed his energy to the newly founded Universidad Yachay Tech in Ecuador, where he served as dean of the School of Mathematical Sciences starting in 2015.

Andreas Griewank's research covers a very broad area of mathematical optimization. It includes for instance the theory of convergence of Newton's method in the degenerate infinite-dimensional case; approaches to global as well as non-smooth optimization; and the efficient computation of exact derivatives by means of algorithmic differentiation. His scientific work was always marked by an abundance of ideas and infectious enthusiasm.

In 2001, Andreas Griewank received the *Max Planck Research Award*. In 2017, he was named Fellow of the Society for Industrial and Applied Mathematics (SIAM).

Promoting young researchers was always close to Andreas Griewank's heart. He supervised 23 doctoral students and numerous master's students from all over the world. He had a special interest in promoting and supporting the mathematical education in developing countries. In addition to his commitment in Ecuador, Andreas Griewank was actively engaged in committees such as the *Committee for Developing Countries* of the European Mathematical Society (EMS) and of the International Mathematical Union (IMU).

His quick death without any significant prior health restrictions fits Andreas Griewank as we knew him. He was restless until the end and always full of energy for life and for new mathematical developments. He could look back on a very fulfilling life.

Our thoughts and deepest sympathy go to his wife, his children and grandchildren.

Andrea Walther and Caren Tischendorf

Translation: John M. Sullivan, Nadja Wisniewski