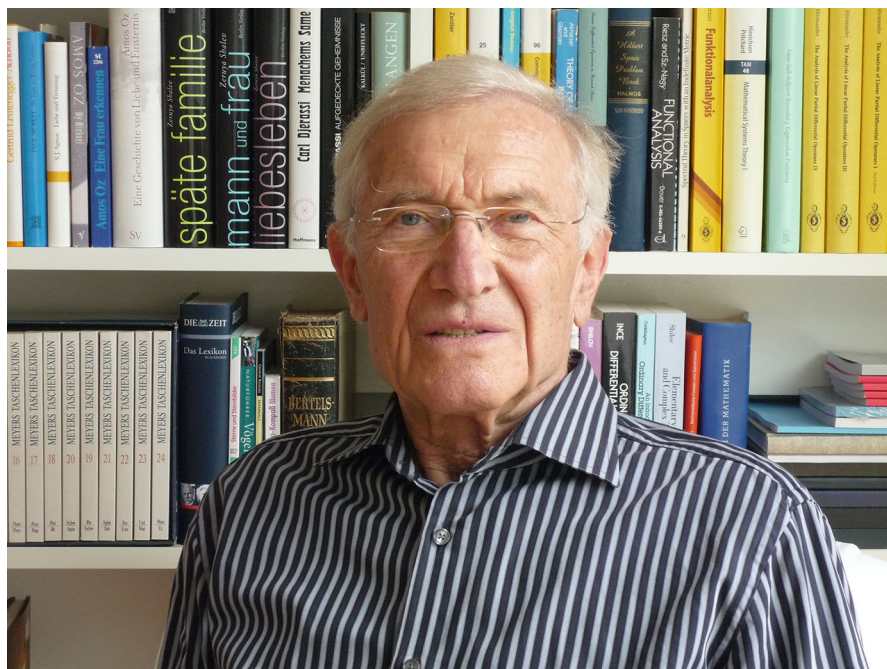




Obituary

In Memoriam Heinz Langer (08.08.1935-25.01.2024)

C. Tretter



The mathematical community lost one of its brightest members, operator theory lost an outstanding scientific luminary, and I lost the great love of my life when Heinz Langer passed away on January 25, 2024, in Bern. The gap he leaves behind, in mathematics and in the hearts of his friends, colleagues and students, is too deep to be filled by anyone else. The gap he leaves in my heart, my soul and my mind is infinitely painful.

The scientific oeuvre of Heinz Langer comprises 209 publications with 2916 citations so far in MathSciNet and one monograph. He published with 76 coauthors, supervised around 25 Ph.D. students, inspired colleagues generously with his ideas and helped countless mathematicians in their careers at the places that he worked at, TU Dresden, Dortmund, Regensburg and

TU Vienna, and that he visited regularly, in particular, in Finland, Sweden, the Netherlands and the United Kingdom.

Heinz Langer was a world leading authority in spectral theory and its applications. His seminal contributions to the theory of operators in spaces with indefinite metric have shaped completely new territory. Equally impressive is the wide area of topics on which Heinz worked including invariant sub-spaces, square roots of maximal dissipative operators, extension theory, stochastic processes, the theory of operator functions and the theory of operator matrices. Even more remarkable is the time span of his publications starting as early as 1960 and their distribution with 111 papers published after 1990, amounting to more than a half published in the second half of the entire publication period. Interestingly, in Heinz' so far last paper published in 2021, which is the last one of our 22 joint publications, we returned to his 1962 invariant subspace paper—and there is still one last manuscript on Heinz' desk in Bern, based on a TU Dresden preprint from 1979, which he had finished except for the abstract and which is awaiting submission.

The great scientific achievements of Heinz Langer were appreciated by many prizes and academic awards. In 1998 he was elected Corresponding Member of the Austrian Academy of Sciences. In 2009 he was awarded the Béla-Szőkefalvi-Nagy Medal of the Bólyai Institute of the University of Szeged, in 2011 the Mark-Grigorjevich-Krein Prize in Mathematics of the National Academy of Sciences of Ukraine, and in 2010 a Leverhulme Professorship at Cardiff University, UK. In 2015 and 2016 he was awarded two honorary doctoral degrees, the first one by Stockholm University in the beautiful Stadshuset, where also the Nobel Prizes are awarded, and the second one by the Technical University Dresden, Heinz' Alma Mater which he had left for good in October 1989, shortly before the fall of the Wall in Germany—a courageous step which paved the way for Heinz to start a new career and life in Vienna.

Heinz Langer's work and life were described in three different volumes of the book series *Operator Theory: Advances and Applications, OTAA*, which were dedicated to him on the occasion of his 60th birthday in 1995 by Aad Dijksma and Israel C. Gohberg (Vol. 106, 1998 [1]), on the occasion of his retirement in 2003 by Aad Dijksma (Vol. 163, 2006 [2]), and to celebrate his honorary doctoral degree 2016 by Bernd Kirstein (Vol. 263, 2018 [3]).

Heinz Langer will also be remembered by so many colleagues for his great efforts to help others in their careers in various ways, by providing interesting research topics, serving as Ph.D. supervisor at TU Dresden and TU Vienna or as referee for Ph.D. and Habilitation theses in several countries, working on editorial boards of numerous journals and book series, and writing reports on papers and grant applications. Until the end he was honorary member of the editorial boards of the journals *Integral Equations and Operator Theory, IEOT*, and *Complex Analysis and Operator Theory, CAOT*, as well as Co-Editor of the book series *Operator Theory: Advances and Applications, OTAA*. In the latter role Heinz' last huge project has been to co-edit a collection of all works of M.G. Krein that have not been translated into English, together with Harry Dym, Ilya Spitkovsky and myself. Heinz

also actively translated around seven papers from German together with his longterm colleague and friend Aad Dijksma from Groningen. This project is almost finished, except for the editorial introduction and bibliography, and it is very sad that Heinz will not see the three or four volumes appear anymore.

These impressive facts and figures describe one of the most exceptional mathematicians of our time, but how to describe the person so many of us knew and my beloved partner in life for almost 30 years? How to describe Heinz' wide and warm heart, his generosity as a friend, his extraordinary and modest character and his strength to overcome difficult times in life? It is impossible. We are left alone with our memories and with tears in our eyes realizing what we lost.

But Heinz gave us some hints, in his speech at the colloquium on his retirement held at TU Vienna on March 4, 2004 [4]—exactly 20 years before I am now writing this text. A special feature that determined his life was, as he wrote, “that I often made decisions which at the time were rather unpopular and not understandable for others”. The three examples he mentions were the choice of his research topic for the Ph.D., operator theory in Hilbert spaces with P. H. Müller rather than the then fashionable abstract linear topological spaces at the end of the 1950s; the decision to go to Odessa for a year to work with M. G. Krein in 1961; and his “decision not to return to the GDR in October 1989 and to give up a secure position for a rather uncertain future”. He did not mention the fourth, private example, to start a new life with me in Vienna, Bremen and Bern. The price Heinz paid for the freedom of being together with me was high, but our love for each other and for mathematics was stronger than the forces that tried to separate us until the end.



Fortunately, in the 29 happy years we had together I had the chance to prove to Heinz that his fourth decision in life, to put his trust in me, was right. Until the very last moment, I strove and did everything possible to make life worth living for him, in spite of his knee arthrosis and anaemia for which he had an excellent treatment in the University Hospital of Bern in the last two years. He could enjoy our pleasant home, terrace and garden in Bern, do mathematics, read in our library, listen to classical music, be in touch with his colleagues and friends or, together with me, go out for walks to a small lake nearby, have coffee (even three days before his unfortunate fall) or dinner somewhere nice in Bern or in the Bernese Alps—and he could firmly hold on to my hands when he “slipped away to the next room”.

I am infinitely grateful for these precious years with Heinz filled with love, science and joy of life, for all the memories of being together at scientific conferences in many different countries, of hiking and skiing in the mountains of Austria and Switzerland, of enjoying museums, theatres and concerts in Vienna, London (the photo is from the Royal Albert Hall 2018) and many other places, and for all the true friends among our colleagues and students whom we loved to meet or invite to our homes. I am deeply grateful to all these friends and numerous other colleagues who have supported me in so many ways in this difficult time after losing Heinz, by attending the funeral in Bern or online on Zoom, by sending me their warm condolences and sharing valuable memories or photos of Heinz with me (now possible here [5]), and by still caring for me now when silence sets in. Thank you so much.

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Christiane Tretter (Editor-in-Chief of IEOT)

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