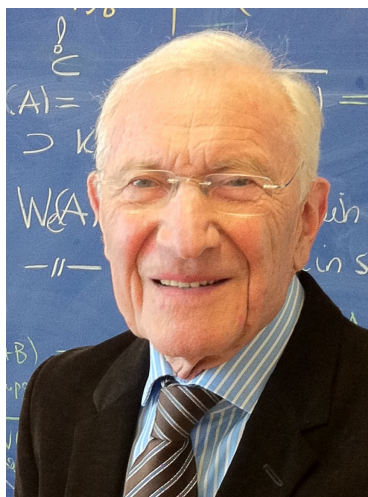# IN MEMORIAM

Prof. Heinz Langer
(1935–2024)

We are deeply saddened by the passing of Professor Emeritus Dr. rer. nat. Heinz Langer, who left us on January 25, 2024, in Bern, at the age of 89. Born on August 8, 1935, in Dresden, Prof. Langer had a distinguished career in mathematics, primarily at TU Dresden and, from 1991 to 2003, at TU Wien.

Heinz Langer was among the leading mathematicians in Functional Analysis of his generation. His work was driven by a pure dedication to mathematical research: solving problems and exploring mathematical mysteries. He once remarked, "If your results are good, people will make the effort to read them, wherever they are published." Though he paid little attention to metrics like citation counts or journal prestige, his contributions are impressive: over 200 publications, approximately 3,000 citations, numerous collaborators and doctoral students, and multiple awards and recognitions from around the world.

Prof. Langer's foundational papers, co-authored in the 1970s with the eminent Soviet mathematician Mark Grigorievich Krein, on generalized resolvents of Hermitian operators in Pontryagin spaces and representations of generalized Nevanlinna functions, are milestones in the field. These works connected the spectrum of self-adjoint operators in Pontryagin spaces to the singularities of matrix generalized Nevanlinna functions. Originally published in German and Russian, some of these works were

later translated into English and published by prominent Western publishers, gaining global recognition among Functional Analysis scholars.

One of Prof. Langer's most significant contributions was his habilitation. Notably, he did not publish this work immediately; instead, he waited until 1981, when he presented it at a conference in Dubrovnik, where it was published in the proceedings. This paper is referenced as: H. Langer, Spectral functions of definitizable operators in Krein spaces, in Functional Analysis, Proceedings, Dubrovnik 1981, Lecture Notes in Mathematics (984), Springer-Verlag.

It was at that Dubrovnik conference that I became Prof. Langer's student. I was in the audience with Prof. Fikret Vajzović when Prof. Svetozar Kurepa introduced Heinz Langer as the next speaker. Prof. Vajzović said to me, "If this is the Heinz Langer from East Germany who co-authored many papers with M.G. Krein, he is truly a great mathematician."

After the lecture, I asked Prof. Langer if he would mentor me for my Ph.D. in mathematics. To my surprise, he agreed. Branko Ćurgus also asked to be his student, and Prof. Langer accepted both of us. We completed our doctoral theses at the Technical University in Dresden and defended them at the University of Sarajevo.

This marked the beginning of Prof. Langer's collaboration with mathematicians from Bosnia and Herzegovina. He delivered two lectures, one at "Džemal Bijedić" University in Mostar and another at the University of Sarajevo. He visited Bosnia and Herzegovina on at least two more occasions, including for our doctoral defenses.

After the Bosnian war ended in the mid-1990s, Prof. Langer and Branko Ćurgus published a paper in the Bosnian Mathematical Journal Radovi Matematički, the predecessor to the Sarajevo Journal of Mathematics. The paper is: B. Ćurgus, H. Langer, "Continuous embeddings, completions, and complementation in Krein spaces," Radovi Matematički, Vol. 12, No. 1 (2003), pp. 37-79. Integr. Equ. Oper. Theory 96, 10 (2024).

According to the article by Prof. Christiane Tretter, "In Memoriam Heinz Langer (08.08.1935–25.01.2024)," Integr. Equ. Oper. Theory 96, 10 (2024), `https://doi.org/10.1007/s00020-024-02763-w`

Prof. Langer was elected a Corresponding Member of the Austrian Academy of Sciences in 1998. He received the Béla Szőkefalvi-Nagy Medal from the University of Szeged in 2009, the Mark Grigorievich Krein Prize from the National Academy of Sciences of Ukraine in 2011, and a Leverhulme Professorship at Cardiff University, UK, in 2010. In 2015 and 2016, he was awarded honorary doctorates from Stockholm University and TU Dresden. Prof. Langer also served as an editor for several mathematical journals, including Radovi Matematički, the predecessor of the Sarajevo Journal of Mathematics, in the late 1990s.

The last time I heard from Prof. Langer was on December 31, 2023, when he replied to my New Year's greetings. Shortly after, I sent him a preprint of my paper, "Characterization of Weyl functions in the class of operator-valued generalized

Nevanlinna functions," which I had submitted to the Sarajevo Journal of Mathematics, hoping to inform him of my recent work. I often sent him my work for feedback. Sadly, I never received a reply to that last email—Prof. Langer had already passed away when I sent it.

More information about Heinz Langer can be found on his Wikipedia page and in the book by Aad Dijksma and Israel Gohberg, Heinz Langer and His Work, Operator Theory: Advances and Applications, Vol. 106, Birkhäuser Verlag, Basel, 1998, pp. 1–22, as well as in various online sources.

Rest in peace, dear Professor Heinz Langer.

<div align="right">Dr. Muhamed Borogovac, ASA, MAAA, Boston, US</div>