



ERICH H. ROTHE

## A Tribute to Erich H. Rothe

BY

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It was in the spring of 1937 that I first came to know Erich Rothe. I was spending a year in Zurich as a graduate student. I had come to Zurich mainly because of Heinz Hopf, and it was to his friend and former classmate Hopf that Erich Rothe had come as a refugee from Nazi Germany. With him were his wife and child, and all were warmly welcomed by the Hopfs.

My first encounter with Rothe was at the Zürcher Kolloquium, where he lectured on his new research on mapping degree and its applications. I was much impressed with the mathematician and the man, for his talent, his warmth, and his modesty.

Soon thereafter our ways parted. Rothe emigrated to the United States, finding a position at William Penn College in Oskaloosa, Iowa. It was a time when academic positions were hard to find, and he considered himself fortunate to have one.

We met again in June of 1940 at the Topology Conference in Ann Arbor. We became friends, played tennis together, and discussed mathematics and common memories of Switzerland. I knew he was not particularly happy in Iowa and was anxious to move to a rigorous center of mathematical research. We kept in touch by correspondence; I learned of his tragic loss of his young wife. When an opening appeared at the University of Michigan, where I was then instructor, I told our chairman (Hildebrandt) of him and his interest in such a position. In 1944 Rothe came to Ann Arbor to begin a long period of brilliant service to the University of Michigan as teacher and scholar.

Rothe brought something very special to mathematical life in Ann Arbor. His unusual depth of understanding of topology, its applications to analysis, and of mathematical physics (he was a contributor to the second edition of the famous text of Frank and von Mises) gave a new breadth to the atmosphere in courses and seminars. He was called on for advice and leadership in fields across the whole spectrum of pure mathematics and in physics. He helped to guide many brilliant students to the Ph.D., including Lynn Albers, Richard Barrar, Joshua Chover, Jane Crinon, Jesus Gil de Lamadrid, and George Minty.

His contributions to mathematical research reflect his great breadth: differential and integral equations, linear and nonlinear functional analysis, topology, calculus of variations. If one seeks a guiding thread through his many papers, it is perhaps the extension to general spaces of the ideas of elementary calculus, in order to answer basic questions arising in partial differential equations and integral equations. Through his papers, his lectures, and his work with graduate students he has made a profound impression in the areas of his work.

In 1964, at the age of 69, Erich Rothe began his retirement furlough at the University of Michigan. But since then he has often been on the scene, participating in seminars and even in Ph.D. orals (by special courtesy), still very much a part of the mathematical life in Ann Arbor. We are happy he is with us, to share his wisdom, his kindness, and his warmth.