Tadeusz Świątkowski 1933–1994

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Tadeusz Świątkowski - OBITUARY

We have learned with sorrow of the death of Professor Tadeusz Świątkowski. He died on 30 October 1994 in Łódź at the age of 61 after heart surgery.

Tadeusz Świątkowski was born on November 28,1933 in Bełchatów, central Poland. In 1941 his mother died and his father was sent by the Nazis to forced labor in Germany so he and his twin brother Wacław (who is now a professor of physics in Wrocław) spent the rest of World War II in the house of their grandparents.

Having completed elementary school in Bełchatów and high school in Piotrków Trybunalski (Lyceum of King Bolesław I the Brave), Tadeusz Świątkowski entered the University of Łódź. He received a M. A. degree in mathematics in 1955, Ph.D.in 1960 and "habilitation" in 1966, all from the University of Łódź.

He became a professor in 1978, having received the title from the Council of State. From the early sixties he worked at the Technical University in Łódź.

He was married in 1962 and is survived by his wife Maria, a physician, their two children: daughter Joanna (also a physician) and son Stefan (a mathematician), and two grandchildren.

The scientific output of Tadeusz Świątkowski consists of more than 30 papers published in the years 1959–1993. At the beginning his scientific interests were connected with analytic functions; then with real analysis and general topology. The main topics of research were: holomorphic functions, integrability and differentiability of real functions, problems of asymmetry, convergence of sequences of functions, classes of continuous functions, separations axioms and functional equations.

In one of his earliest papers [1] he proved that a typical holomorphic function on the unit circle assumes each of its values infinitely many times.

In [2] he solved a problem of Ryll-Nardzewski showing that for each a.e. finite measurable functions f of n variables defined on a rectangle I there exists a homeomorphism F transforming I onto itself such that $f \circ F$ is integrable. Moreover, the i-th coordinate function of F depends only on first i variables. The paper [3] contains a theorem on monotonicity which is stronger than the theorems of Zahorski and of Tolstoff. This is a positive answer to a

problem posed by Zahorski. The problem was solved independently and at the same time by Andrew Bruckner. Świątkowski was interested in the relation between generalized and ordinary derivatives first observed by Khintchine in the twenties. In the paper [4] he formulated the notions of generalized limit and derivative, found a necessary and sufficient condition for a generalized derivative of a monotone function to be an ordinary derivative. The ideas concerning generalized limits were developed in [5]. This paper unifies and generalizes results obtained by the pupils of Zahorski in the early sixties. In the book *Real Functions* by Brian Thomson (Lecture Notes in Math. 1170, 1985) one can find the influence of the ideas of Świątkowski and his pupil, Jacek Jędrzejewski.

He looked at sequences of functions from many points of view: from uniformly and quasi-uniformly convergent sequences, through generalizations of the classical Stone-Weierstrass theorem to the abstract notion of convergence with respect to small systems (a generalization of convergence in measure). This part of his activity is probably less known to the international mathematical community because most of the papers were published in the local journal of Łódź Technical University. Although Tadeusz Świątkowski has published (as a co-author) only one paper [6] concerning classes of continuous real functions, he has initiated and developed a program of study on this topic. At least five of his pupils have prepared doctoral dissertations concerning the comparison of these classes. This is a circle of problems belonging to general topology rather than to real analysis. Another paper of this type is [7] in which he started investigating topologies on the plane defined with the use of behavior of sets on every (or some) straight line. It is not even easy to decide which separation axioms hold in this case.

His interest in functional equations has found expression in a series of papers written together with Janusz Matkowski. The most representative here is the paper [8].

He is co-author of a popular book on geometry and a collection of problems for candidates for students of Technical Universities.

The enclosed list of papers of Professor Świątkowski is by no means complete and includes only these papers which are cited here.

Speaking of the scholarly production of Tadeusz Świątkowski we must not limit ourselves to his publications. He was a magnificent teacher. More than twenty doctoral dissertations were written under his supervision. His excellent ideas can be found in the papers of his pupils. Participation in his seminars was an extraordinary experience: he seemed to say "Look, it is so simple" and never "Admire me, I am so wise". Indeed, he had a rare natural gift of speaking clearly and precisely. He was a real master in drawing mathematical pictures and presenting complicated reasoning or counting "on his fingers".

He was a modest man, we could always look for his help and not only in mathematics. He was a Roman Catholic. We will miss him.

References

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