



In memoriam: Ilie Bârză

Mircea Pitici and Bogdan Suceava

There is no easy way to honor the memory of a mathematician who had such a powerful influence as an inspiring mentor for so many young mathematicians as Ilie Bârză. His life story is both inspiring and the utmost expression of academic quality and intellectual generosity.

Ilie Bârză was born on April 20/21, 1946 in the Southern Transylvanian village of Gura Râului, in Romania, in a family with 15 children. In his senior high-school year he represented Romania at the International Mathematical Olympiad, in Moscow, in 1964.

Ilie Bârză studied mathematics at the University of Bucharest, where he also defended his doctoral thesis, under the coordination of Dr. Cabiria Andreian-Cazacu, in 1980, under the title *Non-orientable Riemann Surfaces*. Some of the results from his thesis can be found in the paper *Fonctions de type méromorphe sur la bouteille de Klein*, published in 1980 in *Revue Roumaine de Mathématiques Pures et Appliquées*.

After his graduation, he taught mathematical analysis at the University of Bucharest

up to 1987, with an interruption of two years, when he taught at Université de Kinshasa in Zaire (presently the Democratic Republic of the Congo).

Ilie Bârză's doctoral mentor was an international personality for the mathematical community, and much of her academic quality passed to her student.

Dr. Cabiria Andreian-Cazacu was a visiting professor at Freie Universität Berlin in 1974, 1976 and 1977. She held numerous scientific communications at prestigious international scientific conferences and seminars, in Belgium, Bulgaria, Canada, Czech Republic, Finland, France, Germany, Hungary, Israel, Italy, Republic of Moldova, Poland, Russia, Spain, Switzerland, Ukraine, and Great Britain.

Among her many projects on behalf of the mathematical community, she served as the main Romanian organizer of 11 international Romanian–Finnish seminars on complex functions, which Ilie Bârză highly valued and much appreciated.

The contributions of four such seminars appeared in the Lecture Notes in Mathematics series, published by Springer-Verlag, namely the volumes 743, 783, 1013, 1014, for which Cabiria Andreian-Cazacu served as editor.

Ilie Bârză traveled to Finland in the summer of 1987 for a new edition of the Romanian–Finnish seminars on complex functions, where he presented his most recent mathematical results. His departure happened in the context of increasing tensions at and around the University of Bucharest, all of them profoundly motivated by the political context of those years, and whose details Ilie Bârză discussed later on in the Swedish media, as e.g. his interview from April 11, 1989, with *Trans Tidning*.

After the conference in Finland, Ilie Bârză pursued his choice for freedom of thought and expression and traveled to Sweden. He lived initially as refugee in Avesta, Eksjö and Hollahult, until 1991, when he joined the faculty at the Technical University of Luleå.

Ilie Bârză moved with his family in Karlstad in 1999, where he was a member of the faculty until his retirement in 2013. He passed away on October 18, 2019, in Karlstad.

The mathematical community remembers also Ilie Bârză for his research contributions. To mention just a few of his results, we should mention that two of his research works, both published by *Mathematica Bohemica*, are written with Dorin Ghisu (from York Univ., Canada).

In their 2009 paper, the authors motivate their investigation from the fact that, under very general conditions, Blaschke products generate branched covering surfaces of the Riemann sphere.

Bârză and Ghisu present in their work a method of finding fundamental domains of such coverings and investigate the corresponding groups of covering transformations.

In one of his later works, published in 2009 in *Annales Polonici Mathematici*, written in collaboration with Viorel Vâjăitu (from the Institute of the Romanian Academy and Université de Lille), Ilie Bârză investigated Cousin-I spaces and domains of holomorphy, with focus on the connection between irreducible projective surfaces and locally Stein surfaces.

Ilie Bârză remains in our memory as an authentic intellectual, thoroughly involved in the problems of his time, reflecting on how he could best serve the interests of his students, always ready to help and support the students motivated to succeed.

Ilie Bârză was a genuine research mathematician who never set for himself the aim to publish much, but who was authentically interested in the depth of the outcome of his efforts.

His research work was mainly in complex analysis, but he extended his investigations towards several complex variables, differential geometry and topology.

Through his vision of ethical rectitude, his heritage is a moral example about a mathematician's professional and moral integrity in the face of the challenges of his historical times. We will always remember him with profound respect, warm friendship, and collegial admiration.

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