

# Professor Henryk Zorski 1927-2003

Witold Gutkowski \*      Krzysztof Wilmanski †



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\*President of 21st International Congress on Theoretical and Applied Mechanics (ICTAM04) and academician of Polish Academy of Sciences, Institute of Fundamental Technological Research (IPPT PAN), Swietokrzyska 21, 00-049 Warszawa, Poland, <http://www.ippt.gov.pl/~wgutkow>

†Professor and Head of the Research Group "Continuum Mechanics" at the Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, Germany (e-mail: [wilmansk@wias-berlin.de](mailto:wilmansk@wias-berlin.de))

Henryk Zorski, Professor of mechanics, a highly respected and very popular member of the international mechanics community passed away on December 26th, 2003. He is survived by his wife, Maria Arcisz, her daughter Krystyna and his son Krzysztof. His sudden and untimely death yields unfinished his lively research activities on geometrical properties of thermodynamics, on a new approach to statistical mechanics of complex systems and on issues in biomechanics and thermodynamical properties of DNA-chains on which he worked during the recent years. Henryk Zorski was born in Czestochowa (Poland), in a family of lawyers. In the year 1939, at the age of 12 he had to escape the German invasion of Poland and with his family he went to the Soviet Union. In 1941, after the outbreak of the Nazi-Soviet war, the family was deported east. Henryk's father joined the Polish Army newly formed in the Soviet Union by General Anders and left for Palestine, where he died 1943, without seeing his family again. Until 1945, Henryk and his mother lived in Kazakhstan, where, in order to survive, Henryk obtained one of the most important certificates of his life – he became a helpmate of an engineer on steam trains transporting goods through Siberia. Thanks to this occupation he and his mother could survive the hunger of the years of deportation. In 1945, after the war came to an end, Henryk begun his education in Warsaw. A year later, he joined his family in England where, despite having to learn English from scratch, he passed his abitur within a year. For a year afterwards he studied at the University of London. After his return to Poland he enrolled at the Wawelberg and Rotwand Engineering School. Upon graduation with distinction as an aircraft engineer in 1951, he was drafted into the army and joined the Military Technical University (Warsaw). There, he received his M.A. degree in 1954 and his Ph.D. in 1955. As soon as he was able to leave the army, in 1957, he joined the Institute of Fundamental Technological Research (IFTR) of the Polish Academy of Sciences in Warsaw. His 46 years long affiliation with the Institute continued even after his formal retirement in 1997 and was only terminated by his death. In 1960 Henryk Zorski obtained his first position of importance at the Institute-he became the Head of the Department of Elasticity which, in 1969, was renamed to the Department of the Theory of Continuous Media. In 1980, after the retirement of Prof. W. Fiszdon, he moved to the Department of Mechanics of Liquids and Gases and served as his Head until his own retirement in 1997. Throughout the time

of employment at the Institute, Henryk was a member of the Scientific Council of the Institute, as well as a member of numerous subbodies of this Council and of the Institute such as the commissions for Ph.D. promotions and habilitations, Editorial Committees of IFTR's scientific journals, etc. He published around 100 papers and edited several books and conference proceedings. He supervised 19 Ph.D. students, a number of habilitations (D.Sc.) and served as a thorough reviewer of numerous Ph.D. theses and D.Sc dissertations. These activities greatly influenced the development of continuum mechanics both in Poland and abroad. Such disciplines as the theory of plates and shells, the theory of dislocations, theories of materials with microstructure, mechanical theories of DNA-chains, bear the sign of his research work and of his supervision of young scientists from all around the world. Here are some of his selected papers

- Plates with discontinuous supports. 1958 Arch. Mech. Stos. (3)
- Singular solutions for thermoelastic media. 1958 Bull. PAN, 6, Serie Sci. Techn.
- Protective formulation of the equations of motion of a continuous medium. 1960 Archives of Mechanics, 5-6;
- On the equations describing small deformations superposed on finite deformation. Proc. of International Union of Theoretical and Applied I-Mechanics. Symposium on Second Order Effects in Solids and Fluids, 1964, —Haifa. (ed M. Reiner)
- Theory of discrete defects. 1966 Archives of Mechanics, 3.
- Statistical theory of dislocations, 1968 Int. J. of Solids and Str, USA, 4.
- On the equations of classical and quantum piezoelectricity /with W. Nasalski/. 1975 Bull. PAN, Serie Sci. Techn. v. XXIII, 6.
- Non-existence of a continuum that models a Newtonian system of particles. 1974 Arch. for Rat. Mech. Anal. v. 56, 4.
- Direct continuum model of interacting particles. 1977 Proc. of Symp. on Continuum Model of Discrete Systems. Waterloo, Canada, (ed J. Provan)

- Continuum model of particle system with three-point interactions. 1978 Letters in Applied and Eng. Sciences.
- New solution equation for dipole chain, (with E. Infeld) 1992, Phys. Rev. Lett, vol.68, 1188.
- Static chaos in polymer and biopolymer chains, (with H. Makaruk) 1997, J. Tech. Phys. Vol.38 (2).

In the year 1962 the State Council of Poland nominated Henryk Zorski to a Professor of Technical Sciences. In 1978 he became a member of the prestigious Academy of Sciences of Bologna (Corrispondente straniero della Classe di Scienze Fisiche e Matematiche dell'Accademia delle Scienze di Bologna, Italy). His international recognition as a scientist was also confirmed by a membership of the General Assembly of the International Union of Theoretical and Applied Mechanics. In 1989 he became the member of Polish Academy of Sciences. Henryk Zorski lectured and held seminars at numerous major and important American Universities (at Berkeley, UCLA, Harvard, Yale, Stanford, Northwestern, Caltech, Cornell, Johns Hopkins, Columbia, Brown and at the National Bureau of Standards), as well as at a number of Universities in Germany, Great Britain, India, France, USSR and Italy. But one of the most important features of his professional life has been Henryk's activity in the organization of research. This activity was particularly important in the times of communism. International contacts of many Polish scientists, their stipends and research visits abroad-in USA, Germany, Italy, France, Sweden and many other Western Countries-were made possible thanks to Henryk's personal contacts and as a consequence of the various international conferences initiated by him. Many of Henryk's students visited and profited from leading scientists in mechanics and applied mathematics owing to their friendship and high esteem for Henryk. One should mention Prof. G. Capriz, C. Cercignani, J. Ericksen, G. Fichera, R. Knops, E. Kröner, I. Müller, R. Rivlin, T. Ruggeri, C. Truesdell and others. In 1977, together with Professor R. S. Rivlin (USA) and Professor G. Fichera (Italy), he founded the International Society for the Interaction of Mechanics and Mathematics (ISIMM). This Society continues to be an important part of the scientific landscape in mechanics and mathematics. Its biannual conferences, STAMM, were organized in many European

countries, twice in Poland, with Henryk's great contribution, and they still attract a lot of attention of the scientific community. Another series of conferences were initiated by Henryk and Prof. Rivlin in 1975 in Jodlowy Dwor (Poland). He played also a lot of attention to work with best international journal. He was a member of editorial boards of: International Journal of Nonlinear Mechanics; International Journal of Solids and Structures; Journal of Mathematics and Physics /India/; *Archiwum Mechaniki Stosowanej* (Archives of Mechanics ) and *Theoretical and Applied Mechanics* (Belgrade).

The first International Symposium on Continuous Models and Discrete Systems (CMDSD) has started a series of important conferences promoting both the subject and Polish scientific contributions to mechanics. As a recognition of Henryk's contributions to science, organizers of some of those international events dedicated them to him. One should mention, in particular, the CMTS8-conference in Varna, Bulgaria (11-16 June 1995), and the Fourth Meeting on Current Ideas in Mechanics and Related Fields held at the Collegium Maius of the Jagiellonian University in Kraków, Poland (25-28 August, 1997) to celebrate his 70th Anniversary. He has left us not only the results of his scientific and organizational work. These, who had the good luck to collaborate with him have learned a unique style of making science. Notwithstanding his extraordinary knowledge in almost all disciplines of modern physics he never wanted to write a book claiming the lack of competence. This exceptional modesty may serve as a model for new generations of scientists. This remarkable scientist and teacher will be greatly missed by his students, colleagues and friends.