

# Applications of Mathematics

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70th birthday of Vratislav Horálek

*Applications of Mathematics*, Vol. 41 (1996), No. 3, 233–234

Persistent URL: <http://dml.cz/dmlcz/134323>

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## 70TH BIRTHDAY OF VRATISLAV HORÁLEK

Vratislav Horálek was born on August 16, 1926, in Roudnice upon Elbe in the Czech Republic, where he received his secondary school education. He graduated in Engineering from the Technical University in Prague (1950), received PhD in 1961 at the Faculty of Mathematics and Physics of the Charles University in Prague and DSc in 1969. From 1952 till his retirement in 1991, he was employed in the Division of Applied Mathematics of the National Research Institute for Machine Design in Prague, first as Senior Research Worker, later as the Head of the Research Group on Stochastic Analysis, and, finally, he was appointed the Head of the Division of Applied Mathematical Statistics.

In 1956, he became interested in the problem of obtaining information concerning 3D structure of materials from their planar sections and/or projections. Later on, in 1961, the name *stereology* was coined for this branch of applied mathematics joining geometry, probability theory and spatial statistics. Vratislav Horálek is founder, ardent advocate and leading representative of Czech stereology. In 1976, he establishes, together with his colleagues and collaborators, the Stereological Section of the Czechoslovak Cybernetical Society and is elected its first chairman; he kept this position till 1991. Under his leadership and owing to his international reputation, this working section stimulated further development of Czechoslovak stereology in a close association with the International Society for Stereology. Dr. Horálek paid a great attention to the promotion of stereological approaches in industrial research, to education of young specialists as well as to the international activity of the section. In the two decades that followed, there was hardly any important European stereological meeting without a participation of Czechoslovak stereologists and without an important lecture given by Dr. Horálek.

It should be stressed, that the main working area of Dr. Horálek was not his scientific activity in the field of stereology, but his assignment of introducing statistical methods in standardization of measurements in materials production and technology. He is the author of numerous technical reports and of 32 national and international standards on applied statistics in quality control. Since 1969, he served as Chairman of the Consultative Body for Quality at the Bureau for Standardization and Measurement. He has been the correspondent of the Executive Science Institute (USA) since

1965 and the regional editor of Statistical Theory and Methods Abstracts issued by the International Statistical Institute (since 1985).

The scientific contributions of Dr. Horálek consist in solutions of various problems in probability theory, mathematical statistics, stochastic geometry and stereology as well as in their applications in heavy industries, metallurgy, metallography and standardization. His most important results are associated with the theory of non-homogeneous birth-immigration-death processes and their applications in various technical problems, random tessellation models with time-dependent intensity of nucleation and their use in the explanation and revision of the ASTM standards on grain size, modeling basic processes accomplishing crystallization (nucleation, growth and segregation), construction of sampling schemes for checking several quality characteristics of products and for bulk material inspection. Dr. Horálek also developed numerous stereological models, in particular for evaluating extraction replica measurements, for estimating spatial structure parameters from both orthogonally and non-orthogonally projected thin as well as thick layers, for analysis of microprobe analyser records in segregation process studies, for evaluating measurements obtained by impact methods applied in drying process analysis etc.

Besides monographic reports on the foundations of stereology and on sampling inspection schemes in industry, he wrote 165 scientific papers, 34 of them published abroad in renowned journals (*Advances of Applied Probability*, *Metrika*, *Journal of Microscopy*, *Material Characterization* etc.), 120 technical research reports and two patents on continuous casting and special steels.

Dr. Horálek is a member of several scientific societies: International Society for Stereology, European Organization for Quality, Czech Society for Cybernetics and Informatics, Czech Society for Quality, Czech Society for Metals etc. In recognition of his service rendered to science and especially to applied mathematics, he was awarded—at the occasion of 6th European Congress for Stereology held in 1993 in Prague—by the Bernard Bolzano Golden Medal of the Academy of Sciences of the Czech Republic “For Merits in the Development of Mathematics”.

The life-long devotion of Dr. Horálek to science, his systematic activity lasting over forty years and his personal qualities set an example to forthcoming generations. We extend to Vratislav Horálek our best wishes of firm health for many years to come.

*Viktor Beneš, Ivan Saxl*