Gejza Dohnal Curriculum vitae

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Brief professional biography:

1978   doctoral thesis at Charles University in Prague on the topic "Equilibrium in coalition games" , RNDr. title (Rerum Naturalium Doctoris)

1979 – 1985   lecturer at Czech Technical University in Prague, Faculty of Mechanical Engineering, department of mathematics

1985   Ph.D. thesis "On the estimation of shift parameter in diffusion processes"

1985 – 1994   assistant professor at Czech Technical University in Prague, Faculty of Mechanical Engineering, Institute of technical mathematics

1995   associated professor at Czech Technical University in Prague, Faculty of Mechanical Engineering, Institute of technical mathematics

2006   head of Center of Quality and Reliability of Production, Czech Technical University in Prague

2008   director of Czech Technological Platform Engineering

2011   full professor at the Czech Technical University in Prague

Membership:

- Czech association of mathematicians and physicists
- Czech Statistical Society - president of the society since 2007
- International Association for Statistical Computing (IASC ISI) - international council member
- Czech Technology Platform Machinery - board of directors member
- ISI - elected member

Selected publications

[1] Dohnal G., Meca M.: ***Departure Time Distribution in PH/PH/1 Queue.*** Mathematical and Computer Modelling in Science and Engineering, 2003, ISBN 80-7015-912-X, pp. 90-94

[2] Dohnal G., Meca M.: ***Computational notes on Phase-type distribution.*** International Conference Risk, Quality and Reliabilty RQR '07. Ostrava, 20.- 21. 9. 2007, ISBN 978-80-248-1575-6, pp. 33-38.

[3] Dohnal G.: ***Markovian models in software reliability,*** Proceedings of the international conference ROBUST'06, JČMF, 2006, (in Czech)

[4] Dohnal G.: ***Models of assembly lines***, Proceedings of the international conference REQUEST'06, CQR, Praha, 2007, (in Czech)

[5] Dohnal G.: *Phase-type distribution with application in reliability modelling,* Forum Statisticum Slovacum 2, 2007,

[6] Dohnal G.: *Enumeration of PH distribution,* 3rd IMS-ISBA Joint meeting, Bormio, 2008,

[7] Dohnal G.: *First Passage time analysis for Markovian deteriorating models.* Safety, Reliability and Risk Analysis, ed. Martorell S., Guedes Soares C., Barnett J., CRC Press Taylor & Francis, 2008, Vol. 3, str. 1847-1851, ISBN 978-0-415-48513-5

[8] Dohnal G.: *Cost effective design of control charts,* International Symposium on Business and Industrial Statistics, Prague, 2008

[9] Dohnal G.:*Markov property in Quantum Logic. A reflection,* Inform. Sci. (Elsevier) 2009, vol. 179, issue 5, str. 485-491, ISSN 0020-0255

[10] Dohnal G.: *The branching model of successive events.* Safety, Reliability and Risk Analysis, ed. Martorell S., Guedes Soares C., Bris R., CRC Press Taylor & Francis, 2009, Vol. 2, str. 1171-1177, ISBN 978-0-415-55509-8

[11] Dohnal G.: *Disaster propagation models,* Engineering Mechanics, vol 17 (2010), ISSN 1802-1484

[12] Dohnal G.: *Delay in statistical control of systems with wear,* Quality and Reliability Engineering International, DOI: 10.1002/qre.1265

[13] Dohnal G.: *Robust adaptive control charts,* Quality and Productivity Research Conference, Long Beach, 2012 [submitted for print in Quality Eng.]

Research team leadership

- Leadership of project team for **statistical analysis and evaluation of microbiological laboratory measurement** along with the development and implemetation of laboratory information system (LIS) in the period 2000-2003.

- The supervisor of research project **The safety evaluation of steam turbogenerators** in a collaboration with SKODA POWER, Pilsen, Czech Republic. The project involves statistical analysis of failure data, metrological systems evaluation and stochastic modelling of safety systems operation.

- The supervisor of research project TANDEM-FOREMADE (FT-TA/026), Theme 3 – the **the research of operational reliability and maintainability of newly developed small airliner** (EV 55). The research team involved 6 researchers and students, 2005-2007

- The director of the Center for Quality and Reliability of Production (8 research teams from 4 technical universities, 2 SME and Czech Academy of Sciences). In the framework of CQR, the **head of CTU research team oriented to metrology and quality control**..

- The head statistical consultant of **Quality Team for Census 2011** in Czech Republic

Practical experiences

- Collaboration with Pharmaceuticals Inc. (1995-2000), in statistical evaluation of clinical bioequivalence studies for the introduction of new medicines. Studies included proposals of new methods to assess the severity of symptoms and side effects, using Hesting's scale.

- Cooperation between CTU and VZLÚ (Aerospace Research and Test Establishment) in 2000-2008 involved several works:

  o Evaluation the results of non-destructive inspections performed on aircraft structures. The developed methodology for evaluation of airframe inspection results was based on generalized linear model (co-author Prof. Ruzicka).

  o Development of an Electronic Catalogue of intensities of failures. This database application replaces the existing "paper" form of the current catalog. E-catalogue involves a program, which allows calculation of various reliability characteristics in parallel-series systems components. Customer: VZLÚ (Aerospace Research and Test Establishment), 2006

  o Calculation of technological capabilities of new developed small transport aircraft. Involved a program for calculation of reliability indicators and optimal maintenance policies.

- Collaboration with the biggest Czech producers of steam-turbines for power plants (ŠKODA Pilzen, ŠKODA Energo, ŠKODA POWER, Doosan, Hoechst) in the period 1990 - 2012. During this period has been closed many smaller contracts, in particular

  o Development of a data-based application for evidence and evaluation of turbine generators failures, including reliability computations. As a result, we developed a stand-alone application which is used in the factory twelve years.

  o The assessment of a risk of an important objectives when turbine blades were broken. Research report for the nuclear power plant in Mochovce (1999). The report contained a section for the calculation of probabilities of rare events (co-authors J. Machek, J. Antoch) and simulation part for the calculation of the probability of interventions sensitive targets using Monte Carlo.

  o The reliability of safety function of the turbine protection equipment of turbogenerator. The works included risk assessment and probability of failure computation for such events as overspeed, vibrations, shifts etc. During our cooperation we have calculated for more than ten large technological systems (incl. nuclear power plants in Dukovany, Mochovce, p.p. in Tušimice and others)

- Software development for various customers, oriented mainly to data-based applications. In 1995 we have established a small consulting and software company CSC Ltd. (Computer Systems Consulting) which is oriented to

  o web-based applications

  o database applications

  o simulation and evaluation of production lines

  o reliability and risk evaluation

  o courses (IT technologies, statistics, quality management)