

CURRICULUM VITAE

Personal data:

First and last names: **Grzegorz ZBOIŃSKI**
Date and place of birth: **11.05.1954, Gdańsk (POLAND)**
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Degrees and titles awarded:

1. **M.Sc.**, Department of Heavy Machines (Cranes and Conveyors), Faculty of Mechanical Engineering, Gdańsk Technical University, 1978, thesis on: Analysis of a Wharf, Level Luffing Jib Crane of the MAN System, defended with a very good mark.
2. **Ph.D.** in Mechanical Engineering, Faculty of Mechanical Engineering, Gdańsk Technical University, 1991, thesis on: Kineto-Static Stress and Strain Analysis of Turbomachinery Blade Attachments, awarded with honours.
3. **D.Sc.** in Mechanics (Solid Mechanics), Institute of Fluid Flow Machinery, Polish Academy of Sciences, 2002, thesis on: Hierarchical Modelling and Finite Element Method for Adaptive Analysis of Complex Structures.
4. **Professor** (titular) in Technical Sciences, Institute of Fluid Flow Machinery and the Central Commission for Scientific Degrees and Titles, awarded by the President of Republic of Poland, 2016.

Scientific interests:

1. **Applied mechanics.** Elasticity and elasto-plasticity. Contact mechanics. Variational principles. Hierarchical modelling of structures. Nano-mechanics and intelligent materials and systems.
2. **Computational mechanics.** Theory of finite difference methods (FDM) and finite element methods (FEM). Non-linear problems of FEM. Adaptive methods (modelling, approximation, error estimation and adaptivity issues).
3. **Mechanical engineering.** Application of FEM to mechanical engineering. Advanced and/or non-linear analysis of technological objects. Stress, strain, contact and vibration analyses of turbomachinery elements.

Education:

- **Graduate studies** at the Technical University of Gdańsk, Faculty of Mechanical Engineering, Department of Heavy Machines, Gdańsk, POLAND, 1974-1978;

- **Postgraduate studies** on machine dynamics at the Saint Cross University, Faculty of Mechanics, Kielce, POLAND, 1980-1982;

Professional career:

Engineering experience:

- **assistant designer** at the Technique Center of Shipbuilding Industry, Gdańsk, POLAND, 1978-1979;
- **designer** at the Vehicles Institute of The Saint Cross Technical University, Kielce, POLAND, 1983-1984;

Academic and research experience:

- **assistant and senior assistant** at the Department of Mechanics and Strength of Materials, Faculty of Mechanical Engineering, Gdańsk Technical University, Gdańsk, POLAND, 1985-1991 (classes in mechanics, laboratory classes in: theory of machines and mechanisms, automatics, informatics);
- **research engineer** at the Institute of Fluid Flow Machinery, Polish Academy of Sciences, Gdańsk, POLAND, 1988-1989;
- **post-doctoral research assistant** at the Institute of Fluid Flow Machinery, Polish Academy of Sciences, Gdańsk, POLAND (1992-2003); lectures in adaptive finite element methods and supervision of a master thesis (commissioned by Gdańsk Technical University);
- **associate professor** at the Institute of Fluid Flow Machinery, Polish Academy of Sciences, Gdańsk, POLAND, from 2003;
- **associate professor** at the Faculty of Technical Sciences of the University of Warmia and Mazury, Olsztyn, POLAND, 2003-2018, since 2018 **full professor** (lectures on: basis of numerical methods, computational mechanics, structural dynamics, and signal processing; also supervision of master theses); **chair of the Mechanics and Machine Design Department** (since 2005);

Foreign experience:

- **research engineer and advisor**, Instituto de Investigaciones Electricas, Cuernavaca, Morelos, MEXICO, 1988-1989 (almost 2 years);
- **visiting researcher**, Texas Institute for Computational and Applied Mathematics, The University of Texas at Austin, Austin, Texas, USA, 1993-1994 (1 year).

Career related studies and courses:

1. Course on *Chaos in Mechanical Systems*, Udine, ITALY, 1986 (1 week);
3. Course on *Computational Methods in Structural Mechanics*, Warsaw, POLAND, 1987 (1 week);
4. **Studies in Pedagogical Development of Academic Teachers**, Gdańsk Technical University, Gdańsk, POLAND, 1986 (1 year);
5. **British Council Language Course**, Gdańsk, POLAND, 1986-1987 (2 years).
6. Course on *Adaptive Finite Elements in Linear and Nonlinear Solid and Structural Mechanics*, Udine, ITALY, 1999 (1 week);

Languages known:

1. **Polish** - native;

2. **English** - fluent in reading, speaking and writing (State Examination Certificate and University of Cambridge First Certificate in English);
3. **Russian** - fluent in reading, speaking and writing;
4. **Spanish** - reading.

Awards:

1. **Awards of the Chancellor of Gdańsk Technical University** to scientific achievements 1986, 1987, 1989, 1990 (4 times);
2. **Awards of the Chancellor of Gdańsk Technical University** to industry commissioned works, 1987, 1988 (2 times);
3. **Mark of preference** awarded to Ph. D. Thesis, Faculty of Mechanical Engineering, Gdańsk Technical University, 1991;
4. Acceptance of biographical notes in *Who's Who in the World*, 14th-24th Editions, 1997-2006, in *Who's Who in Finance and Industry*, 30th Edition and next ones, from 1998, as well as in *Who's Who in Science and Engineering*, 8th Edition, 2005.
5. **Scientific Award of the Polish Academy of Sciences** to monographical series of articles on contact problems of elasticity and elasto-plasticity, 1997.
6. **Award of the Director of the Fluid Flow Machinery Institute** for publications in prestigious international journals, 1999.

Foreign grants:

1. **Scientific internship** (as a part of the project commissioned by Comision Federal de Electricidad) at the Instituto de Investigaciones Electricas (IIE), Cuernavaca, Morelos, Mexico, 1988-1989 (19 months);
2. **Fulbright Research Grant** in *Senior* category, awarded by USA governmental agencies, 1993-1994 (10 months);
3. **TICAM Faculty Research Grant**, Texas Institute for Computational and Applied Mathematics, The University of Texas at Austin, 1994 (2 months).

Main foreign and Polish projects

Title	Character	Duration	Awarded by	Financed by	Contribution
A model and algorithm for determination of kineto-static stress, natural frequencies and mode shapes of turbine blades	Research sub-project	1987, 6 months	Ministry of Science and Education	Ministry of Science and Education	Co-performer
The method and algorithm for elastic and elasto-plastic kineto-static analysis of turbine blades	Research sub-project	1987, 12 months	Ministry of Science and Education	Ministry of Science and Education	Main performer
Development of computer programs for kineto-static analysis of turbine blades	Research sub-project	1988, 6 months	Ministry of Science and Education	Ministry of Science and Education	Manager and main performer
Development of the FE programs for design and diagnostics of turbo-generators	Research project	1988-1989, 18 months	Comission Federal de Electricidad (MEXICO)	Comission Federal de Electricidad (MEXICO)	Main performer
Elasto-plastic contact problems – development of variational inequalities and finite element methods	Research project	1991-1993, 36 months	State Committee for Scientific Research	State Committee for Scientific Research	Main performer
Advanced finite element analysis of	Research	1993-1994,	Fulbright	Council for	Main performer

turbomachinery blades	project	12 months	Comission (USA)	International Exchange of Scholars (USA)	
Static and dynamic analysis of the blade of Mertaniemi II turbine stage	Technical project	1994-1995, 12 months	ABB Poland	ABB Poland	Main performer
Hierarchical modelling of complex mechanical systems	Research project	1998-2000, 36 months	State Committee for Scientific Research	State Committee for Scientific Research	Manager and main performer
Thin-walled structures in adaptive analysis of complex mechanical systems	Research project	2003-2004, 12 months	State Committee for Scientific Research	State Committee for Scientific Research	Consultant
Adaptive analysis of natural frequencies and modes of vibration of mechanical systems	Research project	2003-2005, 36 months	State Committee for Scientific Research	State Committee for Scientific Research	Manager and main performer
Computer code for strength, free vibration, and forced vibration analyses of stiffened panels of ship hulls and superstructures	Technical project	2005, 9 months	Ship Design and Research Centre	Ship Design and Research Centre	Main performer
Hierarchical modelling and <i>hp</i> -adaptive analysis of electro-mechanical systems	Research project	2011-2014, 36 months	State Committee for Scientific Research	National Science Center	Manager and main performer
Functional models and research studies of the design of quasi-autonomous lighting and signaling points.	Research project	2011-2014, 36 months	State Committee for Scientific Research	National Science Center	Manager
Adaptive solid-to-shell transition elements for adaptive modelling and analysis of complex structures	Research project	2011-2013, 24 months	National Science Center	National Science Center	Co-author, consultant and co-performer
<i>hp</i> -Adaptive finite element analysis of structures with boundary layers	Research project	2011-2013, 24 months	National Science Center	National Science Center	Co-author, consultant and co-performer

Scientific attainments:

- 1. Author or co-author of 242 scientific and technical articles, papers and reports;**
- 2. Author and co-author of 3 large, professional finite element computer codes** for: static and dynamic analysis of turbomachinery blades, elastic and elasto-plastic contact analysis of turbomachinery elements, and hierarchical modeling and adaptive analysis of three-dimensional elastic, dielectric and piezoelectric complex structures;
- 3. Main performer of 2 foreign research projects, co-performer, main performer, consultant or manager and main performer of 13 big domestic research or technical projects or sub-projects;**
- 4. Author of 106 reviews of scientific papers** submitted to: *Computer Methods in Applied Mechanics and Engineering* (x3), *An International Journal Computers and Structures* (x1), *Proc. Inst. Mech. Engineers. Part C: Journal of Mechanical Engineering Science* (x5), *Journal of Theoretical and Applied Mechanics* (x5), *Computers and Mathematics with Applications* (x16), *Advances in Vibration Engineering* (x3), *Journal of Vibration Engineering and Technologies* (x5), *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* (x2), *Brodogradnja (Shipbuilding)* (x2), *Archives of Civil and Mechanical Engineering* (x11), *Collectanea Mathematica* (x2), *Proc. Inst. Mech.*

Engineers. Part G: Journal of Aerospace Engineering (x3), Advances in Computational Software (x3), Composites. Part B: Engineering (x1), ASME Journal of Non-Destructive Evaluation, Diagnostics and Prognostics of Engineering Systems (x2), International Journal for Computational Methods in Engineering Science and Mechanics (x2), The Open Numerical Methods Journal (x1), World Journal of Modelling and Simulation (x1), British Journal of Applied Science and Technology (x5), Modelowanie Inżynierskie (Engineering Modelling) (x13), International Journal of Material and Mechanical Engineering (x2), Physical Review & Research International (x1), Computer Assisted Methods in Engineering and Science (x7), Technical Sciences (x3), Applied and Computational Mechanics (x2), Journal of Applied and Computational Mechanics(x2), Advances in Mathematical Physics (x2), Oral (x1).

Author of 13 editorial decisions for *British Journal of Applied Science & Technology*.

5. **Author of 14 reviews** of the research projects within the 6th and 7th Frame Programmes of the European Commission, and of **5 reviews** of the projects for the Polish Scientific Research Committee, National Science Centre and the National Centre for Research and Development.
6. Reviewer of 46 post-conference papers and conference works;
7. Author of 5 key-note papers, coorganizer of 5 mini-symposia.
8. Juror of 3 conference competitions and 1 competition of a scientific association
9. **Editorial board member** of *Applied Mathematics, Informatics and Mechanics* (2003-2006, since 2015), *The Open Numerical Methods Journal* (since 2008), *International Journal of Material and Mechanical Engineering* (since 2012), *British Journal of Applied Science and Technology* (Academic Editor, since 2013), *Transactions of the Institute of Fluid-Flow Machinery* (Advisory Board Member, since 2015).
10. **Member of the Section of Computer Methods of Mechanics of the Committee of Mechanics of the Polish Academy of Sciences** (2003-2011).
11. **Associate Member of the Section of Computational Methods and Optimization of the Committee of Mechanics of the Polish Academy of Sciences** (2012-2015).
12. **Expert (associate member) of the Section of Construction of the Committee of Mechanical Engineering of the Polish Academy of Sciences** (2016-2020).
13. **Number of the documented citations (in parentheses without self-citations) – 287 (193), Hirsch index based on the documented citations – 9 (7).**

Academic activities:

1. **Supervision of 3 Ph.D. theses** and 6 M.Sc. theses of research character.
2. Reviewer in 5 professorial procedures.
3. Reviewer in 3 D.Sc. procedures.
4. Reviewer of 1 Ph.D. and 8 M.Sc. theses.
5. Member of 1 titular professorship commission, 6 D.Sc. and 12 Ph.D. commissions.
6. Reviewer of 1 D.Sc. monograph (thesis).
7. Reviewer of 3 academic handbooks/tutorials.

8. **Lectures in** basis of numerical methods, computational methods, finite element methods, structural dynamics, machine dynamics, and signal processing.
9. **Classes and laboratory classes** in basis of numerical methods, computational methods, finite element methods, structural dynamics, machine dynamics, signal processing, mechanics, theory of machines and mechanisms, automatics, and basis of informatics.

List of books, papers and reports:

Books, monographs, chapters and articles in books:

1. **G. Zboiński.** *Modelowanie hierarchiczne i metoda elementów skończonych do adaptacyjnej analizy struktur złożonych.* Zesz. Nauk. IMP PAN w Gdańsku. Studia i Materiały. 520/1479/2001, Gdańsk 2001, 304 pages.
2. **G. Zboiński,** M. Jasiński. *Adaptacyjna analiza częstości i postaci drgań własnych prostych i złożonych układów mechanicznych.* Wyd. IMP PAN, Gdańsk 2009, 292 pages.
3. **G. Zboiński.** Unresolved problems of adaptive hierarchical modelling and *hp*-adaptive analysis within computational solid mechanics. [In:] *Computer Methods in Mechanics – Lectures of the CMM 2009.* Seria: *Advanced Structural Materials.* Vol. 1, M. Kuczma, K. Wilmański, Eds. Springer Verlag, Berlin 2010, chapter 7, pp. 113-147.
4. **G. Zboiński.** Problems of Hierarchical Modelling and *hp*-Adaptive Finite Element Analysis in Elasticity, Dielectricity and Piezoelectricity. [In:] *Perusal of the Finite Element Method,* R. Petrova, Ed. In Tech, Rijeka 2016, chapter 1, pp. 1-29.
5. **G. Zboiński.** Adaptive modeling and simulation of elastic, dielectric and piezoelectric problems. [In:] *Finite Element Method – Simulation, Numerical Analysis and Solution Techniques,* R. Pacurar, Ed. In Tech, Rijeka 2018, chapter 7, pp. 157-192.
6. **G. Zboiński.** Tuning of the equilibrated residual method for applications in elasticity, dielectricity and piezoelectricity. [In:] *AIP Conference Proceedings 2239* (J. Podgórski, E. Błazik-Borowa, J. Bęc, T. Burczyński, M. Kuczma, J. Latański, J. Warمیński Eds). AIP, 2020, pp. 020050-1-16, <https://doi.org/10.1063/5.007932>.
7. **G. Zboiński,** W. Ostachowicz. FE algorithm as applied to 3D contact problems of turbomachinery blade attachments. [In:] *Computational Mechanics. From Concepts to Computations. Proceedings of the 2nd Asian-Pacific Conference on Computational Mechanics, Sydney (Australia), August 1993* (S. Valliappan, V. A. Pulmano, F. Tin-Loi, Eds). Balkema A. A., Rotterdam 1993, pp. 277-282.
8. **G. Zboiński,** M. Jasiński. Problems of application of hierarchical modelling, displacement FEM and a posteriori residual error estimation to static and dynamic adaptive analysis of complex structures. [In:] *Mechanics of the 21st Century. Proceedings of the 21st ICTAM, Warsaw, Poland, 15-21 August 2004* (red. red. W. Gutkowski, T. A. Kowalewski). Springer, Dordrecht 2005, CD-Rom s. 1-2.
9. **G. Zboiński.** Effective application of the equilibrated residual method in error estimation of the *hp*-approximated 3D-based models of complex structures. [In:] *Adaptive Modeling and Simulation. Proceeding of the VI International Conference*

- on Adaptive Modeling and Simulation* (J. P. Moitinho de Almeida, P. Diez, C. Tiago, N. Pares, Eds). CIMNE, Barcelona (Spain) 2013, E-book pp. 710-722, <http://www.lacan.upc.edu/admos2013/Proceedings.html>.
10. **G. Zboiński**. Analytical aspects of the 3D-based hierarchical shell and transition models for adaptive FEM. [In:] *Shell structures. Theory and Applications. Volume 3* (W. Pietraszkiewicz, J. Górski, Eds). CRC Press, Londyn 2014, pp. 161-164.
 11. **G. Zboiński**. Hierarchical models for adaptive modelling and analysis of coupled electro-mechanical systems. [In:] *Recent Advances in Computational Mechanics* (red. red. T. Łodygowski, J. Rakowski, P. Litewka). CRC Press, Londyn 2014, pp. 339-334.
 12. Ł. Miazio, **G. Zboiński**. *hp*-Adaptive finite element analysis of thin-walled structures with use of the numerical tools for detection and range assessment of boundary layers. [In:] *Recent Advances in Computational Mechanics* (T. Łodygowski, J. Rakowski, P. Litewka, Eds). CRC Press, Londyn 2014, pp. 57-62.
 13. M. Zielińska, **G. Zboiński**. *hp*-Adaptive finite element analysis of thin-walled structures with use of the shell-to-shell transition elements. [In:] *Recent Advances in Computational Mechanics* (T. Łodygowski, J. Rakowski, P. Litewka, Eds). CRC Press, Londyn 2014, pp. 63-72.
 14. **G. Zboiński**. Application of the element residual methods to dielectric and piezoelectric problems. [In:] *Advances in Mechanics: Theoretical, Computational and Interdisciplinary Issues* (Kleiber, T. Burczyński, K. Wilde, J. Górski, K. Winkelmann, Ł. Smakosz, Eds). CRC Press, Londyn 2016, pp. 605-609.
 15. Ł. Miazio, **G. Zboiński**. Stress convergence in adaptive resolution of boundary layers in the case of 3D-based first- and higher-order shell models. [In:] *Advances in Mechanics: Theoretical, Computational and Interdisciplinary Issues* (M. Kleiber, T. Burczyński, K. Wilde, J. Górski, K. Winkelmann, Ł. Smakosz, Eds). CRC Press, Londyn 2016, pp. 397-400.
 16. **G. Zboiński**. Analytical aspects of the 3D-based hierarchical models of three-dimensional, transition and symmetric-thickness piezoelectrics as applied in adaptive FEM. [In:] *Shell structures. Theory and Applications. Volume 4* (W. Pietraszkiewicz, W. Witkowski, Eds). CRC Press, Londyn 2017, pp. 304-306.
 17. M. Zielińska, **G. Zboiński**. Solid-to-shell transition elements in adaptive analysis of model structures of a complex mechanical description. [In:] *AIP Conference Proceedings* **1922** (1) (J. Podgórski, E. Błazik-Borowa, J. Bęc, T. Burczyński, M. Kuczma, J. Latański, J. Warmański, Eds). AIP, 2018, pp. 040004-1-10, <https://doi.org/10.63/1.5019049>.
 18. **G. Zboiński**. Convergence, error estimation and adaptivity in non-elliptic coupled electro-mechanical problems. [In:] *AIP Conference Proceedings* **1922** (1) (red. red. J. Podgórski, E. Błazik-Borowa, J. Bęc, T. Burczyński, M. Kuczma, J. Latański, J. Warmański). AIP, 2018, pp. 040007-1-10, <https://doi.org/10.63/1.5019052>.

International journals papers:

19. **G. Zboiński**. Incremental Variational Principles for Frictional Contact Problems of Linear Elasticity. *ASME Journal of Applied Mechanics*, **60** (1993), 982-985.
20. **G. Zboiński**. Numerical Contact Analysis of Turbomachinery Blade Attachments. *The Archive of Mechanical Engineering*, **32** (1992), 317-331.

21. **G. Zboiński.** The Incremental Variational Principle and Finite Element Displacement Approximation for Frictional Contact Problem of Linear Elasticity. *International Journal of Non-Linear Mechanics*, **28** (1993), 13-28.
22. **G. Zboiński.** FE Algorithm for Incremental Analysis of Large 3D Frictional Contact Problems of Linear Elasticity. *Computers and Structures*, **46** (1993), 669-677.
23. **G. Zboiński.** FE Computer Program for Incremental Analysis of Large 3D Frictional Contact Problems of Linear Elasticity. *Computers and Structures*, **46** (1993), 679-687.
24. **G. Zboiński.** Numerical Research on 3D Contact Problems of Turbomachinery blade Attachments in the Elastic Range. *International Journal of Mechanical Sciences*, **35** (1993), 141-165.
25. **G. Zboiński.** Derivation of the Variational Inequalities of the Incremental Frictional Elastic Contact Problems. *Archives of Mechanics*, **47** (1995), 725-743.
26. **G. Zboiński.** Physical and Geometrical Non-Linearities in Contact Problems of Elastic Turbine Blade Attachments. *Proc. of the Instn. of Mechanical Engineers. Part C: Journal of Mechanical Engineering Science*, **209** (1995), 273-286.
27. **G. Zboiński.** Application of the 3D Triangular-Prism hpq Adaptive Finite Element to Plate and Shell Analysis. *Computers and Structures*, **67** (1997), 497-514.
28. **G. Zboiński, W. Ostachowicz.** A General FE Algorithm for 3D Incremental Analysis of Frictional Contact Problems of Elastoplasticity. *Finite Elements in Analysis and Design*, **27** (1997), 289-305.
29. **G. Zboiński, W. Ostachowicz.** A General FE Computer Program for 3D Incremental Analysis of Frictional Contact Problems of Elastoplasticity. *Finite Elements in Analysis and Design*, **27** (1997), 307-322.
30. **G. Zboiński, W. Ostachowicz.** An Algorithm of a Family of 3D-Based, Solid-to-Shell, hpq/hp-Adaptive Finite Elements. *Journal of Theoretical and Applied Mechanics*, **38** (2000), 791-806.
31. **G. Zboiński, W. Ostachowicz.** Three-Dimensional Elastic and Elasto-Plastic Frictional Contact Analysis of Turbomachinery Blade Attachments. *Journal of Theoretical and Applied Mechanics*, **39** (2001), 769-790.
32. **G. Zboiński.** A posteriori error estimation for hp-approximation of the 3D-based first order shell model. Part I. Theoretical aspects. *Applied Mathematics, Informatics and Mechanics*, **8** (1), (2003), 104-125.
33. **G. Zboiński.** A posteriori error estimation for hp-approximation of the 3D-based first order shell model. Part II. Implementation aspects. *Applied Mathematics, Informatics and Mechanics*, **8** (2), (2003), 59-83.
34. **G. Zboiński, M. Jasiński.** 3D-Based hp-adaptive first order shell finite element for modelling and analysis of Complex Structures. Part 1. The model and the approximation. *International Journal for Numerical Methods in Engineering*, **70** (2007), 1513-1545.
35. **G. Zboiński.** 3D-Based hp-adaptive first order shell finite element for modelling and analysis of Complex Structures. Part 2. Application to structural analysis. *International Journal for Numerical Methods in Engineering*, **70** (2007), 1546-1580.

36. **G. Zboiński**. Adaptive *hpq* finite element methods for the analysis of 3D-based models of complex structures. Part 1. Hierarchical modeling and approximations. *Computer Methods in Applied Mechanics and Engineering*, **199** (2010), 2913-2940.
37. **G. Zboiński**. Adaptive *hpq* finite element methods for the analysis of 3D-based models of complex structures. Part 2. A posteriori error estimation. *Computer Methods in Applied Mechanics and Engineering*, **267** (2013), 531-565.
38. M. Jasiński, **G. Zboiński**. On some *hp*-adaptive finite element method for natural vibrations. *Computers and Mathematics with Applications*, **66** (2013), 2376-2399.
39. **G. Zboiński**. 3D-based hierarchical models and *hpq*-approximations for adaptive finite element method of Laplace problems as exemplified by linear dielectricity. *Computers and Mathematics with Applications*, **78** (2019), 2468–2511.
40. M. Zielińska, **G. Zboiński**. Effectivity of piezoelectric transition elements in modelling of electro-mechanical systems. *Agricultural Engineering*, **23**(2), 2019, 93-101.
41. Ł. Miazio, **G. Zboiński**. A posteriori detection of numerical locking in *hpq*-adaptive finite element analysis. *Applied Sciences*, **10**, 2020, 8247, pp. 1-41; doi:10.3390/app10228247.
42. **G. Zboiński**, M. Zielińska. 3D-Based Transition *hpq/hp*-Adaptive Finite Elements for Analysis of Piezoelectrics. *Applied Sciences*, **11**(9), 2021, 4062, pp. 1-45; doi:10.3390/app11094062.

Polish journals papers:

43. A. Polański, **G. Zboiński**. On a new method of determination of velocities of non-cohesive media within screw conveyors (in Polish). *Zesz. Nauk. Polit. Świąt., Mechanika* **31** (1983), 173-180.
44. A. Polański, **G. Zboiński**. On a possibility of application of plastic flow theory to 3D kinematic problems of non-cohesive media (in Polish). *Roczniki Rol., Seria C*, **77** (1987), 125-141.
45. **G. Zboiński**. Modelling of turbine blades with solid, shell and transition elements. An algorithm (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **103** (1991), 283-286.
46. **G. Zboiński**. Modelling of turbine blades with solid, shell and transition elements. A computer program and results (in Polish). *Zesz. Nauk. Polit. Sl., Mechanika* **103** (1991), 287-290.
47. W. Ostachowicz, **G. Zboiński**. Influence of load modelling on stress state within turbine blade attachment in case of FEM analysis (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **103** (1991), 189-192.
48. **G. Zboiński**, W. Ostachowicz. Influence of boundary constraints modelling on stress state within turbine blade attachment (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **107** (1992), 445-453.
49. **G. Zboiński**. Influence of contact constraints modelling on stress state within turbine blade attachment (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **107** (1992), 437-444.
50. **G. Zboiński**, W. Ostachowicz. Influence of friction on stress state within turbine blade attachment (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **113** (1993), 437-443.

51. **G. Zboiński**. Mathematical model of an incremental contact problem of two elastic bodies (in Polish). *Zesz. Nauk. Polit. Śl., Mechanika* **113** (1993), 429-435.
52. **G. Zboiński**, W. Ostachowicz. FEM algorithm for analysis of elasto-plastic contact problems (in Polish). *Zesz. Nauk. Katedry Mechaniki Technicznej*, **1** (1996), 253-258.
53. **G. Zboiński**, W. Ostachowicz. FEM computer program for analysis of elasto-plastic contact problems (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **4** (1997), 373-378.
54. **G. Zboiński**, W. Ostachowicz. Application of the prismatic, adaptive *hpq* solid element to plate analysis (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **4** (1997), 379-384.
55. **G. Zboiński**, W. Ostachowicz. Application of the prismatic, adaptive *hpq* solid element to shell analysis (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **7** (1998), 423-428.
56. **G. Zboiński**, W. Ostachowicz. An algorithm of a new adaptive *hp* element to plate and shell analysis (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **7** (1998), 417-422.
57. **G. Zboiński**, W. Ostachowicz. Application of the new, adaptive *hp* element to plate and shell analysis (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **9** (1999), 303-308.
58. **G. Zboiński**, W. Ostachowicz. Problems of numerical finite element analysis of thin-walled structures (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **15** (2001), 353-358.
59. M. Jasiński, **G. Zboiński**. Enforcement of plane strains within 3D-based, first order shell element (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **18** (2002), 165-170.
60. **G. Zboiński**. Three-dimensional hierarchic models for adaptive analysis of complex structures (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **20** (2003), 469-474.
61. **G. Zboiński**, W. Ostachowicz. Adaptive analysis of complex structures. Connection of elements of different models, sizes and orders of approximation (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **20** (2003), 475-480.
62. **G. Zboiński**. Adaptive analysis of complex structures. A posteriori error estimation (in Polish). *Zesz. Nauk. Katedry Mechaniki Stosowanej*, **23** (2004), 501-506.
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