

## Curriculum Vitae - Milan Batista

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### Education

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B.S., Mechanical Engineering, University of Ljubljana, 1979  
M.S., Mechanical Engineering, University of Ljubljana, 1984  
Ph.D., Mechanical Engineering, University of Ljubljana, 1995.  
Dissertation title: Analysis of residual stresses in mechanical parts after the heat and mechanical treatment  
Advisor: Prof. Franc Kosel

### Appointments

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University of Ljubljana, Faculty of Mechanical Engineering

- Assistant, Mechanics, 1985-1991
- Senior Lecturer, Mechanics, 1992-1995
- Assistant Professor, Mechanics and Applied Mathematics, 1996-2000
- Associate Professor, Mechanics and Applied Mathematics, 2001-2006
- Full Professor, Mechanics, 2006

### Professional History

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Iskra Power Tools, Kranj, Slovenia

- Design engineer, 1982-1989
- Director of Research department, 1990-1992

University of Ljubljana, Faculty of Maritime Studies and Transport

- Mechanics, Applied Mathematics courses 1992-

Accident Reconstruction Expert

- Court qualified expert witness in road traffic accident investigation and reconstruction, 2001 (Investigated approximately 30 traffic accidents per year)

### Publications in International Refereed Journals

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- M.Batista, E.Twrdy. Optimal velocity functions for car-following models. Journal of Zhejiang University - Science A. Volume 11, Number 7 / July, 2010 p. 520-529
- M.Batista. New analytical solution for bending problem of uniformly loaded rectangular plate supported on corner points. The IES Journal Part A: Civil & Structural Engineering, Volume 3, Issue 2 May 2010, pages 75 – 84.

- M.Batista. Discussion of 'Benchmark symplectic solutions for bending of corner-supported rectangular thin plates'. The IES Journal Part A: Civil & Structural Engineering, Volume 3, Issue 1 February 2010, page 70. <http://dx.doi.org/10.1080/19373260903506946>
- M.Batista. An elementary derivation of basic equations of the Reissner and Mindlin plate theories. Engineering Structures , [Engineering Structures Volume 32, Issue 3](#), March 2010, Pages 906-909
- M.Batista. The derivation of the equations of moderately thick plates by the method of successive approximations . Acta Mechanica: Volume 210, Issue 1 (2010), Page 159. doi:10.1007/s00707-009-0201-4
- M.Batista, A.A.Karawia.The Use of the Sherman-Morrison-Woodbury Formula To Solve Cyclic Block Tri-Diagonal and Cyclic Block Penta-diagonal Linear Systems of Equations . Applied Mathematics and Computation Volume 210, Issue 2, 15 April 2009, Pages 558-563, [doi:10.1016/j.amc.2009.01.003](http://dx.doi.org/10.1016/j.amc.2009.01.003)
- M. Batista, The Nearly Horizontally Rolling of a Thick Disk on a Rough Plane, *Regul. Chaotic Dyn.*, 2008, 13 (4), pp. 344-354, <http://www.springerlink.com/content/y27325368152655h/>
- M.Batista, J.Peternelj. Quantum cards an quantum roads. Central European Journal of Physics. February 2008. <http://dx.doi.org/10.2478/s11534-008-0012-6>
- M.Batista. Self-induced jumping of a rigid body of revolution on a smooth horizontal surface, *International Journal of Non-Linear Mechanics*, Volume 43, Issue 1, January 2008, Pages 26-35
- M.Batista, F.Kosel. Thermoelastic Stability of Double-Layered Spherical Shells. *International Journal of Non-Linear Mechanics*., Volume 41, Issue 9, November 2006, Pages 1016-1027 (**Article win 14 place on Science Direct Top25 Hottest Articles for IJNLM january-march 2007**)
- M.Batista, Integrability of the Motion of a Rolling Disk of Finite Thickness on a Plane , *International Journal of Non-Linear Mechanics*, *International Journal of Non-Linear Mechanics*, Volume 41, Issues 6-7 , July-September 2006, Pages 850-859
- M.Batista, F.Kosel. Thermoelastic Stability of Bimetallic Shallow Shells of Revolution. *International Journal of Solids and Structure*, Volume 44, Issue 2 , 15 January 2007, Pages 447-464
- M.Batista, Steady motion of a rigid disk of finite thickness on a horizontal plane , *International Journal of Non-Linear Mechanics*, Volume 41, Issue 4, May 2006, Pages 605-621 (**Article win 6th place on Science Direct Top25 Hottest Articles for IJNLS april-julij 2006**)
- M. Batista, A cyclic block-tridiagonal solver *Advances in Engineering Software*, Volume 37, Issue 2, February 2006, Pages 69-74
- M. Batista, F. Kosel, Cantilever beam equilibrium configurations *International Journal of Solids and Structures*, Volume 42, Issues 16-17, August 2005, Pages 4663-4672. (**Article win 2nd place on Science Direct Top25 Hottest Articles for IJSS april-julij 2005**)
- M Batista , M.Lakner, J.Peternelj, Particle tunnelling between two boxes joined with a long thin tube, 2004 *European Journal of Physics* 25 145-156 ,

- M. Batista, Stresses in a Confocal Elliptic Ring Subject to Uniform Pressure, *The Journal of Strain Analysis for Engineering Design*, 34, 3, 1999, pp. 217-221(5)
- M. Batista, J. Usenik. Stresses in a circular ring under two forces acting along a diameter. *The Journal of Strain Analysis for Engineering Design*, 1996, 31, 1, pp 75-78
- M. Batista, F. Kosel, Sensitivity analysis of heat treatment of steel, AIAA-1996-4152, Technical Papers. Pt. 2 (A96-38701 10-31)
- M. Batista, F. Kosel, Elastic state in eccentric ring under uniform normal load. *Z. angew. Math. Mech.*, 1995, jhr. 75, n. SII, str. 453-454
- M. Batista, F. Kosel, The stress concentration of an open complete rotating ring. *The Journal of Strain Analysis for Engineering Design*, 1995, 30, 3, pp. 241-244
- M. Batista, F. Kosel, B. Štok, Determination of the stress-strain state in two-fold connected plates. *Z. angew. Math. Mech.*, 1986, 66, 4, pp T 121-T 123

### Publications in arXiv e-prints

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- M. Batista. Uniformly Loaded Rectangular Thin Plates with Symmetrical Boundary Conditions. [arXiv:1001.3016v1](https://arxiv.org/abs/1001.3016v1) . <http://arxiv1.library.cornell.edu/abs/1001.3016v1>
- M. Batista. A Note on a Generalization of Sherman-Morrison-Woodbury formula. <http://arxiv.org/abs/0807.3860>
- M. Batista, A.A. Karawia. A Note on the Use of the Woodbury Formula To Solve Cyclic Block Tri-Diagonal and Cyclic Block Penta-diagonal Linear Systems of Equations. <http://arxiv.org/abs/0806.3639>
- M. Batista. A Method for Solving Cyclic Block Penta-diagonal Systems of Linear Equations. <http://arxiv.org/abs/0803.0874>
- M. Batista. A Note On Steady Flow of Incompressible Fluid Between Two Co-rotating Disks. <http://xxx.arxiv.org/abs/physics/0703005>
- M. Batista. Stability of Vertical Steady Rotation of an Ellipsoid On a Smooth Horizontal Plane; <http://xxx.arxiv.org/abs/physics/0612127>
- M. Batista, J. Peternej. The Falling Time of an Inverted Plane Pendulum, <http://xxx.arxiv.org/abs/physics/0607080>
- M. Batista, On the Mutual Coefficient of Restitution in Two Car Collinear Collisions <http://xxx.arxiv.org/abs/physics/0601168>
- M. Batista , A Note on Linear Force Model in Car Accident Reconstruction <http://xxx.arxiv.org/abs/physics/0511127>
- M. Batista , Solution of a Class of the Riemann-Papperitz Equation with Two Singular Points, <http://xxx.arxiv.org/abs/math-ph/0508022>
- M. Batista , A Note On Stability of Steady Motion of a Rolling Disk <http://xxx.arxiv.org/abs/physics/0507124>

### Software

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- Modulef for MS Windows - Port of Modulef – Finite element library  
<http://www.fpp.edu/~milanb/MODULEF99/>
- GKS for MS Windows - Port of GKS – Graphics Kernel System  
<http://www.fpp.edu/~milanb/gks/>
- NCAR graphics for MS Windows - port of NCAR Graphics – Technical Presentation Graphics <http://www.fpp.edu/~milanb/ncarg/>
- Featflow for MS Windows - Port of Featflow – CFD Software -  
<http://www.fpp.edu/~milanb/featflow/>
- Eulers's disk simulation program <http://www.eulersdisk.com/pubs.html>
- SMAC (Simulation Model of Automobile Collision) version 1984 program enhanced with GUI for MS Windows, <http://www.fpp.edu/~milanb/bsmac>
- PENTA. Matlab, Maple and Fortran programs to solve the cyclic block pentadiagonal linear systems of equations. <http://www.fpp.edu/~milanb/penta>
- A Maple program for: Analytical Treatment of the Involute Gears Geometry [http://www.maplesoft.com/applications/app\\_center\\_view.aspx?AID=2375&CID=4&SCID=54](http://www.maplesoft.com/applications/app_center_view.aspx?AID=2375&CID=4&SCID=54)
- A Maple program for calculation of frequency factors for rectangular plate: <http://www.maplesoft.com/applications/view.aspx?SID=35302>

## Review Work

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- Advances in Engineering Software, Elsevier
- arXiv.org, Cornell University, US (endorser fo classic physic, popular physics, physic and society)
- Collegium Antropologicum, Zagreb, Croatia
- Communications in Numerical Methods in Engineering, Wiley, InterScience
- Computers & Mathematics with Applications, Elsevier
- Engineering Structures, Elsevier
- International Journal of Computational Methods, World Scientific
- International Journal of Materials and Product Technology, Inderscience Publisher
- International Journal of Mechanical Science, Elsevier
- International Journal of Non-Linear Mechanics, Elsevier
- Journal of the Franklin Institute, Elsevier
- Journal of Mechanical Engineering, Ljubljana, Slovenia
- Journal of Mechanics of Materials and Structures, Stanford University, US
- Journal of Mechanical Engineering Science, Proceedings of the Institution of Mechanical Engineers, Part C
- International Journal of Pressure Vessels and Piping,, Elsevier
- Journal of Sound and Vibration, Elsevier
- Mathematical and Computer Modelling,, Elsevier
- Meccanica, International Journal of the Italian Association of Theoretical and Applied Mechanics AIMETA

- Promet-Traffic-Traffico, Scientific Journal for Traffic Theory and Practice, Portorož, Trieste, Zagreb

### **Professional activity**

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- Member, Slovenian Society for Mechanics
- Member, Slovenian Society for Traffic Science
- Member, Society of Automotive Engineers (SAE International)
- Member, Featflow user group, Angewandte Mathematik und Numerik, Universitat Dortmund

### **Leading positions**

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- Head of Traffic technology department at Faculty of maritime studies and Transportation 1993-1996
- Head of Department for Physics and Engineering in Traffic: 2001-2006
- Vice Dean of Faculty of maritime studies and Transportation 1996-1998,2001-present)
- Member of the Senate of University of Ljubljana : 2004-present