

Curriculum Vitae - Milan Batista

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Education

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

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

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

- M.Batista (2015) A Simplified Method to Investigate the Stability of Cantilever Rod Equilibrium Forms. *Mechanical Research Communications*. Article in press, May 2015, doi:10.1016/j.mechrescom.2015.04.009
- M.Batista(2015) An exact theory of the bending of transversely inextensible elastic plates. *Acta mechanica*. doi: [10.1007/s00707-015-1356-9](https://doi.org/10.1007/s00707-015-1356-9)
- M.Batista (2015) Large Deflection of Cantilever Rod Pulled by Cable. *Applied mathematical modelling*, , vol. 39, no. 10/11, 3175-3182, doi: [10.1016/j.apm.2014.10.073](https://doi.org/10.1016/j.apm.2014.10.073)

- M.Batista (2015) Large deflections of a beam subject to three-point bending. *International journal of non-linear mechanics*. 2015, vol. 69, 84-92. doi: [10.1016/j.ijnonlinmec.2014.11.024](https://doi.org/10.1016/j.ijnonlinmec.2014.11.024)
- M.Batista (2014) Analytical treatment of equilibrium configurations of cantilever under terminal loads using Jacobi elliptical functions. *International journal of solids and structures*,. vol. 51, no. 13, 2308-2326 doi: [10.1016/j.ijsolstr.2014.02.036](https://doi.org/10.1016/j.ijsolstr.2014.02.036)
- M.Batista, M.Perkovič (2014) A simple static analysis of moving road vehicle under crosswind. *Journal of Wind Engineering and Industrial Aerodynamics*, , vol. 128, 105-113, doi: [10.1016/j.jweia.2014.02.009](https://doi.org/10.1016/j.jweia.2014.02.009).
- M.Batista (2013) Large deflections of shear-deformable cantilever beam subject to a tip follower force, *International Journal of Mechanical Sciences* Volume 75, October 2013, Pages 388–395
 - M.Batista. Discussion of ‘On the uniqueness of large deflections of a uniform cantilever beam under a tip-concentrated rotational load’ by M. Mutyalarao, D. Bharathi, B. Nageswara Rao. *International Journal of Non-Linear Mechanics*. In Press. 2013. <http://dx.doi.org/10.1016/j.ijnonlinmec.2013.01.004>
- M.Batista. Comparison of Reissner, Mindlin and Reddy plate models with exact three dimensional solution for simply supported isotropic and transverse inextensible rectangular plate. *Meccanica* Volume 47, Number 1, 257-268, DOI: 10.1007/s11012-011-9431-3
- M.Batista. Steady flow of incompressible fluid between two co-rotating disks. *APPLIED MATHEMATICAL MODELLING* Volume: 35 Issue: 10 Pages: 5225-5233 DOI: 10.1016/j.apm.2011.04.021
- M.Batista. On the stress concentration around a hole in an infinite plate subject to a uniform load at infinity. *INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES* Volume: 53 Issue: 4 Pages: 254-261 DOI: 10.1016/j.ijmecsci.2011.01.006 (**Article win 21 place on Science Direct Top25 Hottest Articles for IJMS january-march 2011**)
- M.Batista. Refined Mindlin-Reissner theory of forced vibrations of shear deformable plate. *ENGINEERING STRUCTURES* Volume: 33 Issue: 1 Pages: 265-272 DOI: 10.1016/j.engstruct.2010.09.011
- Batista, M. (2010). New analytical solution for bending problem of uniformly loaded rectangular plate supported on corner points. *IES Journal Part A: Civil and Structural Engineering* 3.
- [Batista, M.](#) 2010. Discussion of ‘Benchmark symplectic solutions for bending of corner-supported rectangular thin plates’. *IES Journal Part A: Civil and Structural Engineering*, 3(1): 70 [\[Taylor & Francis Online\]](#)
- M.Batista. E.Twrdy. Optimal velocity functions for car-following models. *JOURNAL OF ZHEJIANG UNIVERSITY-SCIENCE A* Volume: 11 Issue: 7 Pages: 520-529 DOI: 10.1631/jzus.A0900370 ..
- M.Batista. An elementary derivation of basic equations of the Reissner and Mindlin plate theories. . *ENGINEERING STRUCTURES* Volume: 32 Issue: 3 Pages: 906-909 DOI: 10.1016/j.engstruct.2009.12.046

- M.Batista. The derivation of the equations of moderately thick plates by the method of successive approximations ACTA MECHANICA Volume: 210 Issue: 1-2 Pages: 159-168 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](https://doi.org/10.1016/j.amc.2009.01.003)
- M.Batista. A Simple Throw Model for Frontal Vehicle-Pedestrian Collisions. Promet, Traffic&Transportation, 20, 2008, pp 357-429
- 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 7th 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

- M.Batista. Equilibrium Configurations of Cantilever under Terminal Loads. <http://arxiv.org/abs/1303.6490>
- M.Batista. Some methods of estimating uncertainty in accident reconstruction, <http://arxiv.org/abs/1107.3742>
- M.Batista. Analytical solution for free vibrations of simply supported transversally inextensible homogeneous rectangular plate. <http://arxiv.org/abs/1007.2539>
- M.Batista. Uniformly Loaded Rectangular Thin Plates with Symmetrical Boundary Conditions. <http://arxiv.org/abs/1001.3016>
- 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.Peternelj. 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

- 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 penta-diagonal linear systems of equations. <http://www.fpp.edu/~milanb/penta>
- A Maple program for: Analytical Treatment of the Involute Gears Geometry . (**Editor's Choice**)
http://www.maplesoft.com/applications/app_center_view.aspx?AID=2375&CID=4&SCID=54
- A Maple program for: Vibration of Mindlin rectangular plates. <http://www.maplesoft.com/applications/view.aspx?SID=35302>
- *A Maple program: Equilibrium Configurations of Cantilever Beam under Terminal Load.* 2013; Available from:
<http://www.maplesoft.com/applications/>

Review Work

- Advances in Engineering Software, Elsevier
- arXiv.org, Cornell University, US (endorser fo classic physic, popular physics, physic and society)
- Canadian Journal of Physics
- Communications in Numerical Methods in Engineering, Wiley, InterScience
- Computers & Mathematics with Applications, 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
- International Journal of Solid and Structures, Elsevier
- Journal of Applied Mathematics and Computing, Springer
- Journal of Computational and Applied Mathematics, Elsevier
- 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
- Physica D – nonlinear phenomena, Elsevier
- Physics Letters A, Elsevier

Leading positions

- 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