CURRICULUM VITAE
Miles Barton Rubin
June 2021

PERSONAL

Name: Miles Barton Rubin
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ACADEMIC DEGREES

B.Sc., Special Honors, December 1972, Mechanical Engineering,
        University of Colorado, Boulder

M.Sc., December 1974, Mechanical Engineering (Applied Mechanics)
        University of California, Berkeley

Ph.D., June 1979, Mechanical Engineering (Applied Mechanics)
        University of California, Berkeley

ACADEMIC APPOINTMENTS

Faculty of Mechanical Engineering
Technion - Israel Institute of Technology
Haifa 32000, Israel

Professor Emeritus	October 2019
Gerard Swope Chair in Mechanics	April 2001
Professor	June 1995
Associate Professor	July 1987
Tenured Senior Lecturer	July 1986
Senior Lecturer	May 1984
Lecturer	October 1982

PROFESSIONAL EXPERIENCE

July 1972 – August 1972, Research Assistant
        University of Colorado, Boulder
July 1977 – September 1977, Research Assistant
        University of California, Berkeley
July 1978 – May 1979, Research Assistant
        University of California, Berkeley
July 1979 – August 1982, Research Engineer
        SRI International
July 1985 – August 1985, Visiting Faculty at LLNL
July 1986 – August 1986, Visiting Assistant Research Engineer,
        University of California, Berkeley
July 1987 – August 1987, Visiting Assistant Research Engineer,
        University of New Mexico, Albuquerque
August 1987, Visiting Assistant Research Engineer,

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University of California, Berkeley
August 1987 – September 1987, Visiting Scientist
  SRI International
July 1991 – September 1991, Visiting Faculty at LLNL
July 1992 – August 1992, Visiting Faculty at LLNL
July 1993 – September 1993, Visiting Faculty at LLNL
July 1994 – September 1994, Visiting Faculty at LLNL
July 1995 – August 1995, Visiting Faculty at LLNL
July 1996 – August 1996, Visiting Faculty at LLNL
July 1999 – August 1999, Visiting Faculty at LLNL
July 2000 – August 2000, Visiting Faculty at LLNL
July 2001 – August 2001, Visiting Faculty at LLNL
July 2002 – August 2002, Visiting Faculty at LLNL
July 2003 – August 2003, Visiting Faculty at LLNL
February 2003, Visiting Faculty at LLNL
July 2004 – August 2004, Visiting Faculty at LLNL
February 2005, Visiting Faculty at LLNL
August 2005 – September 2005, Visiting Faculty at LLNL
February 2006 – March 2006, Visiting Faculty at LLNL
July 2006 – August 2006, Visiting Faculty at LLNL
February 2007 – March 2007, Visiting Faculty at LLNL
July 2007 – August 2007, Visiting Faculty at LLNL
July – August 2013, Visiting Faculty at LLNL
July – August 2014, Visiting Faculty at LLNL
August 2015, Visiting Faculty at LLNL
November 2016, Visiting Faculty at LLNL
December 2017 – February 2018, Visiting Faculty at LLNL
January 2018 – February 2019, Visiting Faculty at LLNL

RESEARCH INTERESTS

Continuum mechanics including nonlinear thermomechanical processes.
Constitutive equations for finite deformation of elastic-viscoplastic or viscoelastic
media including metals, porous geological media and biological tissue. Cosserat
theories of shells, rods and points, including the development of the Cosserat
Point Element (CPE) for numerical solutions of continuum problems.

SABBATICALS

August 1988 - April 1989, Sabbatical
  New Mexico Engineering Research Institute
May 1989 , Sabbatical, Visiting Professor
  ETH, Zurich, Switzerland
August 1989 - August 1990, Leave of Absence, Visiting Faculty
  Lawrence Livermore National Laboratory (LLNL)
September 1996 - June 1997, Visiting Professor

University of British Columbia, Vancouver, BC
July 1997 - August 1997, Visiting Faculty at LLNL
September - October 2010, Visiting Professor, University of Tokyo
November 2009 - January 2010, Visiting Professor, University of Auckland
February - May 2010, Visiting Professor, ETH, Zurich
June - July 2010, Visiting Professor, University of Trento
August 2010, Visiting Faculty at LLNL
September 2014, Visiting Professor, University of Victoria, British Columbia
October - November 2014, Visiting Professor, Ecole des Mines, Paris
December 2014 - February 2015, Visiting Professor, University of Auckland
September 2016 - Visiting Professor, University College Dublin
October 2016 - Visiting Professor, University of Carlos III of Madrid
November - December 2016, Visiting Faculty at LLNL
December 2016 - February 2017, Visiting Professor, University of Auckland
August 2017 – October 2017, Visiting Professor, ETH, Zurich
November 2017 - Visiting Professor, Ecole des Mines, Paris
December 2017 - January 2018, Visiting Faculty at LLNL
September 2018 - October 2018, Visiting Professor, Tufts University
November 2018 - January 2019, Visiting Professor, University of Sydney
January 2019 - February 2019, Visiting Faculty at LLNL

TEACHING EXPERIENCE

Graduate
Introduction to Continuum Mechanics
    University of California, Berkeley (Teaching Associate 1978-1979);
    SRI International (1980); University of British Columbia (1996);Technion
Foundations of the Theory of Continuous Media
    University of California, Berkeley (Teaching Associate, 1978); Technion
Advanced Elasticity, Technion
Cosserat Theories of Shells, Rods and Points, Technion

Undergraduate
Statics, Strength of Materials, Dynamics, Solid Mechanics I,
Applied Thermoelasticity, Technion

TECHNION ACTIVITIES

January 1996 - June 1996, Member of the Standing Senate Committee for
    Appointments of Lecturers, etc.
December 2000 - December 2002, Member of the Standing Senate Preparatory
    Committee
February 2005 - December 2008, Member of the Academic Court
November 2006 - December 2008, Elected member of the Academic Senate
March 2007 - February 2009, Chairman for Professional Committees
January 2009 - August 2009, Elected member of the Academic Senate

February 2009 - August 2009, Member of the Academic Court
March 2009 - August 2009, Chairman for Professional Committees
October 2010 - December 2012, Chairman for Professional Committees
January 2011 - December 2012, Committee for Appointment
     of Research Professor
March 2012 - January 2014, Chairman of the Building Committee
January 2012 - July 2014, Technion Faculty-Student Committee
February 2012 – June 2013, Technion committee to evaluate the curriculum and
     load on students
January 2013 - June 2014, Chairman of the Technion Faculty-Student
     Committee

DEPARTMENTAL ACTIVITIES

November 1995 - 1997, Organizer of the Forum for Nonlinear Mechanics in the
     Faculty of Mechanical Engineering at Technion
January - December 2000, Coordinator for Undergraduate Studies in the Faculty
     of Mechanical Engineering at Technion
January 2001 - December 2001, Vice Dean for Undergraduate Studies in the
     Faculty of Mechanical Engineering at Technion
March 2013 – June 2014, Member of the Faculty Committee for Improving
     Teaching
October 2015 – July 2016, Chairman of the Faculty Committee for Improving
     Teaching
October 2015 – July 2016, Member of the Faculty Committee for Graduate
     Studies

PUBLIC PROFESSIONAL ACTIVITIES

January 1972 - December 1972, President of ASME Student Chapter, University
     of Colorado, Boulder
June 1993 - June 1994, Chairman of the 25th Israel Conference on Mechanical
     Engineering, Technion, 25-26 May 1994
October 1994 - January 2004, Secretary of Israel Society for Theoretical
     and Applied Mechanics
July 1996 - June 2005, Member of the Editorial Board of the International Journal
     of Solids and Structures
March 1998 - August 2010, Member of the Editorial Board of Journal of Applied
     Mathematics and Physics (ZAMP)
January 2004 – December 2015, President of the Israel Society for Theoretical
     and Applied Mechanics
November 2012 - October 2016, Member of the Bureau of the International
     Union of Theoretical and Applied Mechanics
January 2004 - Present, Member of the General Assembly of the International
     Union of Theoretical and Applied Mechanics

September 2005 - Present, Member of the Editorial Board of the Journal of
      Mechanics of Materials and Structures.
March 2007 - Present, Member of the Editorial Board of the International Journal
      of Engineering Science.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Tau Beta Pi
American Society of Mechanical Engineers
The Israel Society For Theoretical And Applied Mechanics

HONORS

August 1971 - July 1972, Western Electric Scholarship Fund
August 1972 - December 1972, Western Electric Scholarship Fund
October 1973 - June 1974, Odell Wilson Scholarship Fund
July 1974 - June 1977, National Science Foundation Fellowship
October 1984 - September 1985, Milton and Lillian Edwards Academic Lecturer
October 1985 - September 1986, Milton and Lillian Edwards Academic Lecturer
October 1986 - September 1987, Milton and Lillian Edwards Academic Lecturer
October 1986 - September 1987, Henri Gutwirth Fund For The Promotion
      Of Research
1987   Landau Prize for my paper "An Elastic-Viscoplastic Model Exhibiting
      Continuity Of Solid And Fluid States"
1991   David Doodi Ben-Aharon prize for research on "Large Deformation
      Behavior of Elastic-Viscoplastic Materials".
2007   2007 Award for Best Applied Research from the American Rock
      Mechanics Association (ARMA) for the article: Morris, J.P., Rubin, M.B.,
      Blair, S.C., Glenn, L.A. and Heuze, F.E. (2004). Simulations of
      underground structures subjected to dynamic loading using the distinct
      element method. *Engineering Computations* **21**, 384-408. Awarded at the
      US rock mechanics symposium held in San Francisco June 29-July 2,
      2008.
2007   Technion award for excellence in teaching Dynamics (F07)
2008   Technion award for excellence in teaching Dynamics (F08)
2008   Technion award for excellence in teaching Continuum Mechanics (F08)
2009   Sept.-Oct: Japanese Society for the Promotion of Science (JSPS)
      Fellowship, University of Tokyo.
2014   Yanai Prize for Excellence in academic education for the academic year
      2013-2014.

GRADUATE STUDENTS

Post-Doctoral Researchers

1. August 2005 - February 2007. Dr. Mahmood Jabareen: GIF-2002963 "Investigation and extension of a new finite element formulations based on the theory of a Cosserat point". Assistant Professor in the Faculty of Civil and Environmental Engineering, Technion.

2. January 2009 - September 2010. Dr. Leah Sharipova: ISF-103/08t "A Cosserat Point Element for elastic-viscoplastic solids and fluids". Researcher in the Institute of Mechancal Engineering Problems, Russian Academy of Sciences St. Petersburg

3. March 2011 - October 2011. Dr. Marc Hollenstein: ISF-103/08 "A Cosserat Point Element for elastic-viscoplastic solids and fluids". Researcher in ANSIS, Zurich, Switzerland.

4. August 2016 – February 2018. Dr. Mahmoud M Safadi: ISF-208/15 "A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues".

D.Sc. or Ph.D Theses completed

1. October 1993. Mr. David Elata, D.Sc.: "Representations Of The Strain Energy Function Of Anisotropic Elastic Materials With Application To Damage Evolution In Brittle Materials". Principal advisor with Professor E. Altus as a co-advisor. Associate Professor in the Faculty of Mechanical Engineering, Technion.

2. January 1998. Mr. Ilia Roisman, D.Sc.: "Normal And Oblique Penetration Of Rigid And Deformable/Eroding Projectiles Into Elastic-Plastic Targets Including A Description Of Fragmentation And Vulnerability". Co-advisor with Professor A.L. Yarin as the principal advisor. Researcher, Center of Smart Interfaces, Technical University of Darmstadt.

3. March 2001. Mr. Eli Bar-On, Ph.D.: "Local response of brittle materials (ceramics) to impact", Co-advisor with Professor D. Yankelevsky as the principal advisor. Researcher at Rafael.

4. February 2011. Mr. Meir Brand, Ph.D.: "An elastic-plastic Cosserat Point Element for large deformations of impulsively loaded beams". Researcher at Rafael

5. July 2014. Mr. Zvi Cooper, Ph.D.: "A constitutive model for dynamic failure of ceramics including micro-cracking and porous dilation below the Hugoniot Elastic Limit". Started M.Sc. in October 2005 (Brakim). Transferred to direct Ph.D. track in June 2009. Researcher at Israel Aircraft Industries.

6. August 2016. Mr. Mahmoud M Safadi, Ph.D.: "An Eulerian theoretical structure for modeling growth, remodeling and morphogenesis of soft tissues". Started M.Sc. in

October 2013. Transferred to direct Ph.D. track in May 2014. Post-Doctoral researcher at Technion.

7. December 2016. Ms. Dana Solav, Ph.D.: "Non rigid kinematic analysis in various biomechanical applications using Cosserat Point theory". Started Oct. 2011 (with Prof. A Wolf). Transferred to direct Ph.D. track in November 2012. Post-Doctoral Scholar at MIT.

M.Sc. Theses completed

1. December 1989. Mr. Roie Chen, M.Sc.: "Second Order Effects In Elastic-Viscoplastic Materials Subjected To Finite Shear Strain". Principal advisor with Professor S. R. Bodner as a co-advisor.

2. June 1993. Mr. Avishay Lindenfeld, M.Sc.: "A Thermodynamic Treatment Of A Viscoplastic Model With Reference To The Stored Energy Of Cold Work". Completed. Co-advisor with Professor S. R. Bodner as the principal advisor. Researher at Rafael.

3. May, 1999. Mr. Gilad Yossifon, M.Sc.: "Penetration Of A Rigid Projectile Into A Metal Multi-Layered Target And Characterization Of The Debris Cloud", Co-advisor with Professor A.L. Yarin as the principal advisor. Assistant Professor in the Faculty of Mechanical Engineering, Technion.

4. April 2002. Mr. Ben Nadler, M.Sc.: "Post-Buckling behavior of nonlinear elastic beams and truss-like structures (with beam elements) using the theory of a Cosserat point". Associate Professor in the Department of Mechanical Engineering, Victoria University, Victoria, British Columbia.

5. April 2005. Mr. Meir Brand, M.Sc.: "A simplified constrained theory of a Cosserat point for the numerical solution of dynamic problems of nonlinear elastic rods". Researcher at Rafael.

6. April 2005. Mr. Or Yogev, M.Sc.: "Experimental and analytical investigation of dynamic lateral torsional post-buckling of an elastic beam-mass system using the theory of a Cosserat point." Co-advisor with Prof. I. Bucher and Prof. H. Flashner. Founder of an energy startup company in Israel.

7. July 2005. Mr. Doron Klepach, M.Sc.: "Influence of membrane stresses on postbuckling of rectangular plates using a nonlinear elastic 3-D Cosserat brick element".

8. August 2009. Mr. Zachi Katzir, M.Sc. (Brakim): "A simple formula for dynamic spherical cavity expansion in a compressible elastic-perfectly plastic material".

9.   April 2011. Mr. Elad Sterman-Cohen, M.Sc.: "Influence of machining processes on the performance of copper liners for Explosively Formed Projectiles (EFP)". Researcher at Rafael.

10.   December 2011. Mr. Leonid Rapoport, (Raamim) M.Sc.: "Analysis of spherical cavity expansion in elastic-plastic media and its relevance to penetration mechanics". Ph.D student at MIT (Spring, 2015)

11.   March 2012. Mr. Eli Hanukah, M.Sc.: "Development of a higher order tetrahedral Cosserat Point Element (CPE) for nonlinear elasticity". Ph.D. student in the Faculty of Mechanical Engineering at Technion.

RESEARCH GRANTS

1994-1995, Grant of the MAFAT, State of Israel, 180,000 NIS.
      Principal investigators: Yarin AL and Rubin MB

2005-2007, GIF - 2002963. 150,500 Euro. Investigation and extension of a new finite element formulation based on the theory of a Cosserat point.
      Principal investigators: Rubin MB (Israel) and Wriggers P(Germany)

2008-2012, ISF - 103/08. 521,000 NIS. A Cosserat Point Element for elastic-viscoplastic solids and fluids.
      Principal investigator: Rubin MB

2012-2014, HP Indigo - SBB1885373. 100,000 NIS. Modeling the NIP - Developing a constitutive equation for the blanket.
      Principal investigators: Rubin MB and Jabareen M

2015-2019, ISF - 208/15. 812,564 NIS. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues.
      Principal investigator: Rubin MB

PUBLICATIONS

Ph.D Thesis

Rubin MB (1979) Some Applications Of The Theory Of Fluid Sheets, University of California, Berkeley.

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June 2021

Refereed papers in professional journals

Published papers (The names of graduate students are underlined)

1. Naghdi PM and Rubin MB (1981) On the transition to planing of a boat, *J. Fluid Mech.* **103**, 345-374.

2. Naghdi PM and Rubin MB (1981) On inviscid flow in a waterfall, *J. Fluid Mech* **103**, 375-387.

3. Rubin MB (1982) A thermoelastic-viscoplastic model with a rate-dependent yield strength, *J. Appl. Mech.* **49**, 305-311.

4. Naghdi PM and Rubin MB (1982) The effect of curvature at the detachment point of a fluid sheet from a rigid boundary, *Physics of Fluids* **25**, 1110-1116.

5. Rubin MB (1983) Experimental study of hydraulic fracturing in an impermeable material, *J. Energy Resources Tech.* **105**, 116-124.

6. Rubin MB (1983) A quantitative evaluation of the classical approximations used to predict the extent of vertical hydraulic fractures, *J. Energy Resources Tech.* **105**, 512-527.

7. Naghdi PM and Rubin MB (1984) On the squat of a ship, *J. of Ship Research*; Society of Naval Architects and Marine Engineers, **28**, 107-117.

8. Naghdi PM and Rubin MB (1984) Constrained theories of rods, *J. of Elasticity* **14**, 343-361.

9. Rubin MB (1985) On the theory of a Cosserat point and its application to the numerical solution of continuum problems, *J. Appl. Mech.* **52**, 368-372.

10. Rubin MB (1985) On the numerical solution of one-dimensional continuum problems using the theory of a Cosserat point, *J. Appl. Mech.* **52**, 373-378.

11. Rosenau P and Rubin MB (1985) Motion of a nonlinear string - some exact solutions to an old problem, *Physical Review A* **31**, 3480-3482.

12. Rubin MB (1986) Free vibration of a rectangular parallelepiped using the theory of a Cosserat point, *J. Appl. Mech* **53**, 45-50.

13. Rubin MB (1986) An elastic-viscoplastic model for large deformation, *Int. J. of Engng. Sci.* **24**, 1083-1095.

14. Rubin MB (1986) Heat conduction in plates and shells with emphasis on a conical shell, *Int. J. of Solids Structures* **22**, 527-551.

9

15. Rosenau P and Rubin MB (1986) Some nonlinear three-dimensional motions of an elastic string, *Physica* **19D**, 433-439.

16. Rubin MB (1986) A uniqueness theorem for thermoelastic shells with generalized boundary conditions, *Q. of Appl. Math.* **XXIV**, 431-440.

17. Rubin MB (1987) On the numerical solution of nonlinear string problems using the theory of a Cosserat point, *Int. J. of Solids Structures* **23**, 335-349.

18. Rubin MB (1987) On the singular nature of linearization of certain constrained theories of shells, *J. Appl. Mech.* **54**, 472-474.

19. Rubin MB (1987) An elastic-viscoplastic model for metals subjected to high compression, *J. Appl. Mech.* **54**, 532-538.

20. Lindberg HE, Rubin MB, and Schwer LE (1987) Dynamic buckling of cylindrical shells from oscillating waves following axial impact, *Int. J. Solids Structures* **23**, 669-692.

21. Rubin MB (1987) On the numerical solution of spherically symmetric problems using the theory of a Cosserat surface, *Int. J. Solids Structures* **23**, 769-784.

22. Rubin MB (1987) An elastic-viscoplastic model exhibiting continuity of solid and fluid states, *Int. J. Engng. Sci.* **25**, 1175-1191.

23. Rubin MB (1988) The significance of pure measures of distortion in nonlinear elasticity with reference to the Poynting problem, *J. Elasticity* **20**, 53-64.

24. Naghdi PM and Rubin MB (1989) The effects of energy dissipation on the transition to planing of a boat, *J. Ship Research*; Society of Naval Architects and Marine Engineers, **33**, 35-46.

25. Naghdi PM and Rubin MB (1989) On the significance of normal cross-sectional extension in beam theory with application to contact problems, *Int. J. Solids Structures* **25**, 249-265.

26. Rubin MB (1989) A time integration procedure for large plastic deformation in elastic-viscoplastic metals, *J. of Math. and Physics (ZAMP)* **40**, 846-871.

27. Rubin MB (1990) Analysis of weak shocks in 6061-T6 aluminum, Invited Paper: In *Shock Compression Of Condensed Matter* (Edited by SC Schmidt, JN Johnson, LW Davison) Elsevier Science Pub., B. V., 321-328.

28. Rubin MB (1990) Efficient time integration of a viscoplastic model for shock waves, *J. Appl. Phys.* **68**, 1356-1358.

29.   Rubin MB (1990) An elastic-viscoplastic model for large deformations of soils", *ASCE J. Engineering Mechanics* **116**, 1995-2015.

30.   Rubin MB (1990) Analysis of viscoplasticity in 6061-T6 aluminum, *J. Appl. Phys.* **68**, 4523-4530.

31.   Luehr CP and Rubin MB (1990) The significance of projection operators in the spectral representation of symmetric second order tensors, *Computer Methods in Applied Mechanics and Engineering* **84**, 243-246.

32.   Rubin MB (1991) A simple and convenient isotropic failure surface, *ASCE J. Engineering Mechanics* **117**, 348-369. Erratum *ASCE J. Engineering Mechanics* (2021) **147**, 08220002.

33.   Rubin MB and Chen R (1991) Universal relations for elastically isotropic elastic-plastic materials, *ASME J. Appl. Mech.* **58**, 283-285.

34.   Khen R and Rubin MB (1992) Analytical modelling of second order effects in large deformation plasticity, *Int. J. Solids Structures* **29**, 2235-2258.

35.   Rubin MB (1992) Hyperbolic heat conduction and the second law, *Int. J. Engng. Sci.* **30**, 1665-1676.

36.   Rubin MB and Yarin AL (1993) On the relationship between phenomenological models for elastic-viscoplastic metals and polymeric liquids, *J. Non-Newtonian Fluid Mech.* **50**, 79-88. Corrigendum, **57**, 321 (1995).

37.   Elata D and Rubin MB (1994) Isotropy of strain energy functions which depend only on a finite number of directional strain measures, *ASME J. Appl. Mech.* **61**, 284-289.

38.   Rubin MB (1994) Plasticity theory formulated in terms of physically based microstructural variables – Part I: Theory, *Int. J. Solids Structures* **31**, 2615-2634.

39.   Rubin MB (1994) Plasticity theory formulated in terms of physically based microstructural variables – Part II: Examples, *Int. J. Solids Structures* **31**, 2635-2652.

40.   Bodner SR and Rubin MB (1994) Modeling of hardening at very high strain rates, *J. Appl. Phys.* **76**, 2742-2747.

41.   Elata D and Rubin MB (1995) A new representation for the strain energy of anisotropic elastic materials with application to damage evolution in brittle materials, *Mechanics of Materials* **19**, 171-192.

42.   Naghdi PM and Rubin MB (1995) Restrictions on nonlinear constitutive equations for elastic shells, *J. Elasticity* **39**, 133-163.

43.   Rubin MB, Rosenau P and Gottlieb O (1995) A continuum model of dispersion caused by an inherent material characteristic length, *J. Appl. Phys.* **77**, 4054-4063.

44.   Rubin MB (1995) Numerical solution of two- and three-dimensional thermomechanical problems using the theory of a Cosserat point, *J. of Math. and Physics (ZAMP)* **46**, Special Issue, S308-S334. In *Theoretical, Experimental, And Numerical Contributions To The Mechanics Of Fluids And Solids*, Edited by J Casey and MJ Crochet, Birkhauser Verlag, Basel (1995).

45.   Rubin MB and Bodner SR (1995) An incremental elastic-viscoplastic theory indicating a reduced modulus for non-proportional buckling, *Int. J. Solids Structures* **32**, 2967-2987.

46.   Yarin AL, Rubin MB and Roisman IV (1995) Penetration of a rigid Projectile into an elastic-plastic target of finite thickness, *Int. J. Impact Engng.* **16**, 801-831.

47.   Rubin MB, Elata D, and Attia AV (1996) Modeling added compressibility of porosity and the thermomechanical response of wet porous rock with application to Mt. Helen Tuff, *Int. J. Solids and Structures* **33**, 761-793.

48.   Rubin MB and Attia AV (1996) Calculation of hyperelastic response of finitely deformed elastic-viscoplastic materials, *Int. J. Numerical Meth. Engng.* **39**, 309-320.

49.   Rubin MB (1996) Restrictions on nonlinear constitutive equations for elastic rods, *J. Elasticity* **44**, 9-36.

50.   Rubin MB and Gottlieb O (1996) Numerical solutions of forced vibration and whirling of a nonlinear string using the theory of a Cosserat point, *J. of Sound and Vibration* **197**, 85-101.

51.   Rubin MB (1996) On the treatment of elastic deformation in finite elastic-viscoplastic theory, *Int. J. Plasticity* **12**, 951-965.

52.   Rubin MB (1997) Relationship of critical flow in waterfall to minimum energy head, *ASCE J. Hydraulics Engng.* **123**, 82-84.

53.   Rubin MB (1997) An intrinsic formulation for nonlinear elastic rods, *Int. J. Solids Structures* **34**, 4191-4212.

54.   Roisman IV, Yarin AL and Rubin MB (1997) Oblique penetration of a rigid projectile into an elastic-plastic target, *Int. J. Impact Engng.* **19**, 769-795.

55. Rubin MB (1998) Physical restrictions on the impulse acting during three-dimensional impact of two "rigid" bodies, *ASME J. Appl. Mech.* **65**, 464-469.

56. Rubin MB, Bodner SR and Binur NS (1998) An elastic-viscoplastic model for excised facial skin and SMAS, *ASME J. Biomechanical Engng.* **120**, 686-689.

57. Rubin MB (1998) On a continuum model of an intrinsic length scale, Proceedings EUROMECH-MECAMAT `97, *J. de Physique IV* **8**, Edited by A Bertram, F Sidoroff, EDP Sciences, Pr8-333 - Pr8-340.

58. Roisman IV, Weber K, Yarin AL, Hohler V and Rubin MB (1999) Oblique penetration of a rigid projectile into a thick elastic-plastic target: theory and experiment, *Int. J. Impact Engng.* **22**, 707-726.

59. Rubin MB, Vorobiev, OYu and Glenn LA (2000) Mechanical and numerical modeling of a porous elastic-viscoplastic material with tensile failure, *Int. J. Solids Structures* **37**, 1841-1871.

60. Rubin MB and Altus E (2000) An Alternative Method For Teaching Dynamics, *The Int. J. of Engineering Education* **16**, 447-456.

61. Rubin MB (2000) An exact solution for steady motion of an extensible string in multipulley belt drive systems, *ASME J. of Mechanical Design* **122**, 311-316.

62. Rubin MB (2001) A simple derivation of Cosserat theories of shells, rods and points, In *Advances in the Mechanics of Plates and Shells*, The Avinoam Libai Anniversary Volume, Solid Mechanics and Its Applications, Vol. 88, pp. 277-294. Kluwer, Dordrecht.

63. Rubin MB (2001) On The Theory Of A Cosserat Point And Shear Locking In Thin Beams, *Communications in Numerical Methods in Engineering* **17**, 201-213.

64. Rubin MB (2001) Numerical solution procedures for nonlinear elastic rods using the theory of a Cosserat point, *Int. J. Solids and Structures* **38**, 4395-4437.

65. Yossifon G, Rubin MB and Yarin AL (2001) Penetration of a rigid projectile into a finite thickness elastic-plastic target – Comparison between theory and numerical computations, *Int. J. Impact Engng.* **25**, 265-290.

66. Roisman IV, Yarin AL and Rubin MB (2001) Normal penetration of an eroding projectile into an elastic-plastic target, *Int. J. Impact Engng.* **25**, 573-597.

67. Rubin MB (2001) Physical reasons for abandoning plastic deformation measures in finite plasticity and viscoplasticity theory, *Archives of Mechanics* **53**, 519-539.

68. Rubin MB and Yarin AL (2002) A Generalized Formula For The Penetration Depth Of A Deformable Projectile, *Int. J. Impact Engng.* **27**, 387-398. Corrigendum, **31**, 1318-1320 (2005).

69. <u>Bar-on E</u>, Partom Y, Rubin MB and Yankelevsky DZ (2002) Porous compaction as the mechanism causing the Hugoniot Elastic Limit, *Int. J. Impact Engng.* **27**, 509-520.

70. <u>Yossifon G</u>, Yarin AL and Rubin MB (2002) Penetration Of A Rigid Projectile Into A Multi-Layered Target: Theory And Numerical Computations, *Int. J. Engng. Science* **40**, 1381-1401.

71. Rubin MB and Bodner SR (2002) A three-dimensional nonlinear model for dissipative response of soft tissues. *Int. J. Solids and Structures* **39**, 5081-5099. Corrigendum, **41**, 1739-1740 (2004).

72. Rubin MB (2003) On the quest for the best Timoshenko shear coefficient, *ASME J. Appl. Mech.* **70**, 154-157.

73. Rubin MB and Lomov I (2003). A thermodynamically consistent large deformation elastic-viscoplastic model with directional tensile failure. *Int. J. Solids and Structures* **40**, 4299-4318.

74. <u>Bar-on E</u>, Rubin MB and Yankelevsky DZ (2003) Thermo-mechanical constitutive equations for the dynamic response of Ceramics, *Int. J. Solids and Structures* **40**, 4549-4562.

75. <u>Nadler B</u> and Rubin MB (2003) A new 3-D finite element for nonlinear elasticity using the theory of a Cosserat point, *Int. J. Solids and Structures* **40**, 4585-4614.

76. <u>Nadler B</u> and Rubin MB (2003) Determination of hourglass coefficients in the theory of a Cosserat point for nonlinear elastic beams, *Int. J. Solids and Structures* **40**, 6163-6188.

77. Rubin MB (2004). Buckling of elastic shallow arches using the theory of a Cosserat point. *ASCE J. Engrg. Mech.* **130**, 216-224.

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10. Jabareen M and Rubin MB. Recent advances in the Cosserat Point Element (CPE) technology for finite elasticity. APM2011 - Repino, Russia 1-5 July 2011.

11. Removal of unphysical arbitrariness in constitutive equations for elastically anisotropic nonlinear elastic-viscoplastic solids. Oberwolfach 18-24 March 2012.

Contributed talks

1. Ninth U.S. National Congress of Applied Mechanics, Cornell University, 21-25 June 1982. "A Thermoelastic-Viscoplastic Model With A Rate-Dependent Yield Strength".

2. C.N.R.S. International Colloquium on Large Deformations Of Solids: Physical Basis and Mathematical Modelling, Ecole Polytechnique, 30 September - 2 October 1985. "A Unified Elastic-Viscoplastic Theory With Large Deformations".

3. 21st Israel Conference on Mechanical Engineering, Technion, 23-24 June 1987. "A Model For Anisotropic Elastic-Viscoplastic Metals Subjected To High Compression".

4. Finite Deformation Plasticity Workshop, Sandia - Livermore, 13-16 September 1988. "Restrictions Ensuring Arbitrariness Of The Reference Configuration".

5. XVIIIth International Congress Of Theoretical And Applied Mechanics, Haifa, 22-28 August 1992. "An Alternative Formulation Of Constitutive Equations For An Elastically Isotropic Elastic-Plastic Material".

6. 1995 APS Topical Conference on Shock Compression Of Condensed Matter, Seattle, 13-18 August, 1995. "Modeling Added Compressibility Of Porosity And

The Thermomechanical Response of Wet Porous Rock". by Rubin, M. B., Elata, D., and Attia, A. V.

7. International Mechanical Engineering Congress & Exposition, San Francisco, 12-17 November 1995. "On Elastic Deformation In Finite Elastic-Viscoplastic Theory".

8. Intrinsic Equations Of Equilibrium For Nonlinear Elastic Rods, 26th Israel Conference on Mechanical Engineering, Technion, 21-22 May 1996.

9. Intrinsic Equations Of Equilibrium For Nonlinear Elastic Rods, James H. Belfer Memorial Symposium, Technion 12 June 1996.

10. Intrinsic Equations Of Equilibrium For Nonlinear Elastic Rods, XIXth International Congress of Theoretical and Applied Mechanics, Kyoto, Japan, 25-31 August 1996.

11. On A Continuum Model Of An Intrinsic Length Scale, EUROMECH-MECAMAT, Magdeburg, Germany, 23-26 February 1998.

12. Control Of Localization Using A Continuum Model For An Intrinsic Length Scale, The First Israel-France Bi-National Workshop on Failure of Materials, Kyriat Anavim, Israel, 11-12 May 1998.

13. Physical Restrictions On The Impulse Acting During Three-Dimensional Impact Of Two "Rigid" Bodies, The 27th Israel Conference On Mechanical Engineering, Haifa, 19-20 May 1998.

14. Unphysical Features of Plasticity Theories Which Depend on total and Plastic Deformations, Fourth International Conference on Constitutive Laws for Engineering Materials, Rensselaer, New York, 27-30 July 1999.

15. Modeling of Porous Elastic-Viscoplastic Material with Tensile Failure, Fourth International Conference on Constitutive Laws for Engineering Materials, Rensselaer, New York, 27-30 July 1999.

16. Numerical Solution Procedures For Non-Liner Elastic Rods Using The theory Of A Cosserat Point, 5th U.S. National congress on Computational Mechanics, Boulder, Colorado, 4-6 August, 1999.

17. A simple time-dependent model of an aging face. Society of Engineering Sciences, SES 2004, Lincoln Nebraska, 10-13 October, 2004.

18. Restrictions on linear constitutive equations for a rigid heat conducting Cosserat shell. Society of Engineering Sciences, SES 2004, Lincoln Nebraska, 10-13 October, 2004.

19. Postbuckling response and ultimate strength of a rectangular elastic plate using a Cosserat brick element. 6th European Solid Mechanics Conference, 28 August - 1 September 2006, Budapest, Hungary.

20. A generalized 3-D Cosserat point brick element for nonlinear elasticity: Comparison with other element formulations. ICCES'07, 3-6 January 2007, Miami Beach, FL.

21. An improved 3-D brick Cosserat Point Element (CPE) for nonlinear elasticity. USNCM9, 22-26 July 2007, San Francisco, CA.

22. A generalized Cosserat point element (CPE) for isotropic nonlinear elastic materials including irregular 3-D brick and thin structures, ICTAM2008, 24-30 August 2008, Adelaide, Australia.

23. Jabareen M and Rubin MB. A Cosserat point element (CPE) for the numerical solution of problems in finite elasticity. EUROMECH-510 - Mechanics of generalized continua. A hundred years after the Cosserats 13-16 May 2009.

23. An Anisotropic Discrete Fiber Model Based On A Generalized Strain Invariant With Application To Soft Biological Tissues. ESMC 2012, Graz, Austria 9-13 July, 2012.

24. An Anisotropic Discrete Fiber Model Based On A Generalized Strain Invariant With Application To Soft Biological Tissues. ICTAM 2012, Beijing, China 19-24 August, 2012.

25. Removal of unphysical arbitrariness in constitutive equations for elastically anisotropic nonlinear elastic-viscoplastic solids. ISIMM 2012, Haifa, Israel 3-6 September 2012.

26. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. PACAM XIII, 22-24 May 2013, Houston TX.

27. Modeling rate-independent hysteresis in large deformations of preconditioned soft tissues. PACAM XIV, 22-28 March 2014, Santiago, Chile.

28. An Eulerian formulation of soft tissue growth. ICTAM XXIV 21-26 August 2016, Montreal, Canada.

29. Significant differences in the mechanical modeling of confined growth predicted by the Lagrangian and Eulerian formulations. EMI 2018, 30 May 2018, Boston.

30. A thermomechanical breakage model for shock-loaded granular media. SIF2018, 5 December 2018, Perth, Australia.

Refereed Papers in Conference proceedings

1. Bodner SR and Rubin MB "A Unified Elastic-Viscoplastic Theory With Large Deformations", In *Large Elastic Deformations Of Solids - Physical Basis And Mathematical Modelling*, (Edited by J. Gittus, J. Zarka, and S. Nemat-Nasser), Elsevier Applied Science Pub., London, pp. 129-140 (1986).

2. Rubin MB "Analysis Of Weak Shocks In 6061-T6 Aluminum", In *Shock Compression Of Condensed Matter - 1989*, (Eds. S. C. Schmidt, J. N. Johnson, and L. W. Dawson), North-Holland, Amsterdam, pp. 321-332 (1990). Proc. of the American Physical Society Topical Conference held in Albuquerque, New Mexico, 14-17 August 1989.

3. Khen R and Rubin MB "The Swift Effect In Finite Deformation Plasticity", Proceedings of the 24th Israel Conference on Mechanical Engineering, Technion, 18-19 May, Sec. 4.12.4 pp. 1-4 (1992).

4. Attia AV and Rubin MB "The Effect Of Dilatancy On The Unloading Behavior Of Mt. Helen Tuff", In Proceedings Of The Numerical Modeling For Underground Nuclear Test Monitoring Symposium, held in Durango, Colorado on March 23-25, 1993. Los Alamos National Laboratory Report No. LA-UR-93-3839.

5. Bodner SR and Rubin MB "Viscoplastic Buckling Under Proportional And Non-Proportional Loading Conditions", To appear in the Proceedings of the Fourth International Symposium On Plasticity, Baltimore, Maryland, USA, July (1993).

6. Elata D and Rubin MB "Isotropy Of Strain Energy Functions Which Depend On Only A Finite Number Of Directional Strain Measures", The Winter Annual Meeting of ASME, Nov. 94-WA/APM-2 pp. 1-6 (1994) [same as paper No. 37].

7. Yarin AL, Rubin MB and Roisman IV "Normal And Oblique Penetration Of A Rigid Projectile Into An Elastic-Plastic Target", Proceedings of the 15th International Symposium on Ballistics, Jerusalem, 21-24 May, pp. 83-90 (1995).

8. Bodner SR and Rubin MB "On The Representation Of Rate Dependence Of Hardening And Non-Proportional Loading Effects By A Viscoplastic Model", To appear in Proceedings of ICES '95 (International Conference on Computational Engineering Science), The Big Island of Hawaii, July 30- August 3, 1995.

9. Rubin MB, Elata D, and Attia AV "Modeling Added Compressibility Of Porosity And The Thermomechanical Response of Wet Porous Rock", 1995 APS Topical Conference on Shock Compression Of Condensed Matter, Seattle, 13-18 August, 1995.

10. Rubin MB "On Elastic Deformation In Finite Elastic-Viscoplastic Theory", MD-Vol. 69-1, 1995 IMECE, Proceedings of the ASME Materials Division, ASME 1995, pp. 571-576.

11. Roisman IV, Yarin AL and Rubin MB "Oblique Penetration Of Rigid Projectiles And Normal Penetration Of Deformable/Eroding Projectiles Into Elastic-Plastic Targets", Proceedings of the 26th Israel Conference on Mechanical Engineering, Technion 21-22 May, (1996).

12. Bodner SR and Rubin MB "A Study Of The Extensional Properties Of Excised Facial Skin And SMAS", To appear in the Proceedings of the Fifth Pan American congress of Applied Mechanics - PACAM V, January 2-4, 1997, San Juan, Puerto Rico.

13. Rubin MB and Bodner SR "Modeling Inelastic Response Of Excised Facial Skin And SMAS", Proc. of Plasticity 97: The Sixth International Symposium On Plasticity And Its Current Applications; Physics And Mechanics Of Finite Plastic & Viscoplastic Deformation, Juneau, AL, July 1997, pp. 437-438.

14. Rubin MB "On A Continuum Model Of An Intrinsic Length Scale", Proceedings of EUROMECH-MECAMAT, 2nd European Mechanics of Materials Conference on Mechanics of Materials with Intrinsic Length Scale: Physics, Experiments, Modelling, and Applications, Magdeburg, Germany, February 1998, pp. 331-338.

15. Rubin MB "Control Of Localization Using A Continuum Model For An Intrinsic Length Scale", Proceedings of the First Israel-France Bi-National Workshop on Failure of Materials, Kyriat Anavim, Israel, May 1998, pp. 2-8.

16. Rubin MB "Physical Restrictions On The Impulse Acting During Three-Dimensional Impact Of Two 'Rigid' Bodies", Proceedings of the 27th Israel Conference On Mechanical Engineering, Haifa, May 1998, pp. 592-594.

17. Rubin MB "Unphysical Features of Plasticity Theories Which Depend on total and Plastic Deformations", Proceedings of the Fourth International Conference on Constitutive Laws for Engineering Materials, Rensselaer, New York (eds. R.C. Picu and E. Krempl), 27-30 July 1999, pp. 184-187.

18. Rubin MB "Modeling of Porous Elastic-Viscoplastic Material with Tensile Failure, Fourth International Conference on Constitutive Laws for Engineering Materials", Rensselaer, New York (eds. R.C. Picu and E. Krempl), 27-30 July 1999, pp. 375-378.

19. Bar-on E, Rubin MB and Yankelevsky DZ "Thermo-Mechanical Constitutive Equations For Brittle Porous Materials". DYMAT2000. 6th International conference on mechanical and physical behaviour of materials under dynamic loading. Krakow, Poland. September 25-29, 2000.

20. Jabareen M, Hanukah E, Rubin MB "A Quadratic Ten Node Tetrahedral Cosserat Point Element for Nonlinear Elasticity". Proceedings of the Eleventh International

Conference on Computational Structures Technology, B.H.V. Topping, (Editor), Civil-Comp Press, Stirlingshire, Scotland, 2012.

Participation in organizing conferences

1. 25th Israel Conference on Mechanical Engineering, Technion, 25-26 May 1994, Chairman

2. James H. (Jimmy) Belfer Memorial Symposium on Nonlinear Mechanics, Technion, 12 June 1996, Chairman

3. 2nd European Mechanics of Materials Conference on Mechanics of Materials with Intrinsic Length Scale: Physics, Experiments, Modelling and Applications, Magdeburg, Germany, 23-26 February, 1998, Member of the Scientific Committee.

4. James H. (Jimmy) Belfer Memorial Symposium on Nonlinear Mechanics, Technion, 11 June 2000, Chairman

5. EDSA2002, 6th Biennial Conference on Engineering Systems Design And Analysis, Istanbul, Turkey, 8-11 July, 2002.

6. EUROMECH Colloquium 510. Mechanics of Generalized Contiuna: A hundred years after the Cosserats. Paris 13-16 May 2009, Member of the Scientific Committee.

7. Cosserat + 100: International conference on the legacy of "Theorie des Corps Deformables" by Eugene and Francios Cosserat in the centenary of its publication. Paris 15-17 July 2009. Member of the Scientific Committee.

INVITED COURSES

Introduction to Continuum Mechanics, Department of Mechanics, ETH Zurich, 15-25 September 2003.

A 3-D brick Cosserat Point Element (CPE) for nonlinear elasticity, CISM Course: Computational and Experimental Mechanics of Advanced Materials, Udine, Italy, 8-12 September 2008.

Cosserat Point Elements (CPEs) for nonlinear elasticity. Ecole des Mines, Paris, October-November 2014.

Eulerian formulation of inelasticity – from metal plasticity to the growth of biological tissues. Department of Mechanics, ETH Zurich. 6-14 September 2017.

Eulerian formulation of inelasticity – from metal plasticity to the growth of biological tissues. Department of Mechanics, Ecole des Mines, Paris, October 2017.

SEMINARS

1. On The Transition To Planing Of A Boat, University of California, Berkeley, 7 May 1981.

2. On The Transition To Planing Of A Boat, Stanford University, 21 May 1981.

3. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, Israel Society For Theoretical And Applied Mechanics - Tel Aviv, 15 May 1984.

4. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, SRI International, 23 July 1984.

5. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, Lawrence Livermore National Laboratory, 27 July 1984.

6. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, ETH, Zurich, February 1986.

7. On The Numerical Solution Of Spherically Symmetric Problems Using The Theory Of A Cosserat Point, University of Southern California, 9 September 1986.

8. On The Numerical Solution Of Spherically Symmetric Problems Using The Theory Of A Cosserat Point, University of New Mexico, September 1986.

9. An Elastic-Viscoplastic Model Exhibiting Continuity Of Solid And Fluid States, Air Force Weapons Laboratory, Kirtland Air Force Base, Albuquerque, 14 August 1987.

10. An Elastic-Viscoplastic Model Exhibiting Continuity Of Solid And Fluid States, ETH, Zurich, 15 February 1988.

11. A Model For Anisotropic Elastic-Viscoplastic Metals Subjected To High Compression, ETH, Zurich, 18 February 1988.

12. On The Numerical Solution Of Nonlinear String Problems Using The Theory Of A Cosserat Point, University of New Mexico, 28 February 1989.

13. An Elastic-Viscoplastic Model Exhibiting Continuity Of Solid And Fluid States, General Motors Research Laboratories, Warren, MI, 9 March 1989.

14. Significance Of Normal Cross-Sectional Extension In Beam Theory With Application To Contact Problems, ETH, Zurich, 25 May 1989.

15. An Elastic-Viscoplastic Model For Large Deformation Of Soils, Lawrence Livermore National Laboratory, 14 September 1989.

16. A Simple And Convenient Isotropic Failure Surface, Lawrence Livermore National Laboratory, May 1990.

17. A Simple And Convenient Isotropic Failure Surface, SRI International, August 1990.

18. Hyperbolic Heat Conduction And The Second Law, Ben Gurion University Of The Negev, 24 February 1993.

19. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Lawrence Livermore National Laboratory, 1 September 1993.

20. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, SRI International, 6 September 1993.

21. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, University of California, Berkeley, 15 September 1993.

22. Incremental Theory Of Nonproportional Plastic Buckling, The Israel Society For Theoretical And Applied Mechanics - Technion, 12 December 1993.

23. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, ETH, Zurich, 1 June 1994.

24. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Delft University, 6 June 1994.

25. Calculation Of Hyperelastic Response Of Finitely Deformed Elastic-Viscoplastic Materials, SRI International, 8 September 1994.

26. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Florida Atlantic University, 27 January 1995.

27. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, U.R.A. - C.N.R.S., Poitiers, France, 30 January 1995.

28. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Universite Paris-Nord Institut Galilee, France, 1 February 1995.

29. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Ecole Central de Lyon, France, 2 February 1995.

30. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Otto-von-Guericke-Universitaet, Magdeburg, Germany, 20 October 1995.

31. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, National Technical University of Athens, Athens, Greece, 10 November 1995.

32. Intrinsic Equations Of Equilibrium For Nonlinear Elastic Rods, University of British Columbia, Vancouver, Canada, 29 October 1996.

33. Restrictions On Nonlinear Constitutive Equations For Elastic Shells, University of British Columbia, Vancouver, Canada, 13 November 1996.

34. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Universidade de Brasilia, 12 March 1997.

35. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Universidade Federal do Rio de Janeiro COPPE, 18 March 1997.

36. An Intrinsic Formulation For Nonlinear Elastic Rods, Pontificia Universidade Catolica do Rio de Janeiro PUC, 19 March 1997.

37. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Washington State University, Pullman, 2 April 1997.

38. An Intrinsic Formulation For Nonlinear Elastic Rods, University of Manitoba, Winnipeg, 8 April 1997.

39. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, University of Calgary, Calgary, 10 April 1997.

40. An Elastic-Viscoplastic Model For Excised Facial Skin And SMAS, Pennsylvania State University, 6 May 1997.

41. A Critical Discussion of the Role of Computers in Engineering Education, SETI (Science, Engineering and Technology Innovations) Speakers Series, Green College, University of British Columbia, Vancouver, 13 May 1997.

42. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, University of Michigan, Ann Arbor, 19 May 1997.

43. An Elastic-Viscoplastic Model For Excised Facial Skin And SMAS, University of Buffalo, Buffalo, 23 May 1997.

44. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, University of Toronto, Toronto, Canada, 26 May 1997.

45. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Darmstadt University of Technology, Darmstadt Germany, 27 February 1998.

46. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, ETH, Zurich, 7 September 1998.

47. An Elastic-Viscoplastic Model For Excised Facial Skin And SMAS, ETH, Zurich, 8 September 1998.

48. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, University of Chicago, 12 February 1999.

49. Numerical Solution Procedures for nonlinear Elastic Rods Using the Theory of a Cosserat Point, University of California, Berkeley, 17 February 1999.

50. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Georgia Tech., 1 March 1999.

51. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Istanbul Technical University, September 1999.

52. Numerical Solution Procedures for nonlinear Elastic Rods Using the Theory of a Cosserat Point, Istanbul Technical University, September 1999.

53. Modeling Inelastic Response of Excised Facial Skin and SMAS, Istanbul Technical University, September 1999.

54. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, CalTech, 24 February 2000.

55. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, Oxford University, 16 October 2000.

56. On The Treatment Of Elastic Deformation In Finite Plasticity Theory, University College Dublin, 18 October 2000.

57. Numerical Solution Procedures for nonlinear Elastic Rods Using the Theory of a Cosserat Point, ETH, Zurich, 29 June 2001.

58. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity Theory, Lawrence Livermore National Laboratory, 23 August 2001.

59. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity Theory, L'Ecole des Mines, Centre des Materiaux, Evry , 4 October 2001.

60. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity Theory, Texas A&M, 6 March 2002.

61. Elimination Of Shear Locking In Thin Elastic Beams Using The Theory Of A Cosserat Point, Texas A&M, 7 March 2002.

62. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity Theory, Otto-von-Guericke-Universitaet, Magdeburg, Germany, 2 May 2002.

63. Elimination Of Shear Locking In Thin Elastic Beams Using The Theory Of A Cosserat Point, Weierstrass Institute, Berlin, 3 May 2002.

64. A Thermodynamically Consistent Large Deformation Elastic-Viscoplastic Model With Directional Tensile Failure, Lawrence Livermore National Laboratory, 2 August, 2002.

65. Numerical applications of the theory of a Cosserat Point, University of California, Berkeley, 6 February 2003.

66. Numerical applications of the theory of a Cosserat Point, Stanford University, 13 February 2003.

67. Numerical applications of the theory of a Cosserat Point, Institute for Computational Mechanics, University of Hanover, Hanover, Germany, 16 June 2003.

68. Restrictions on linear constitutive equations for a rigid heat conducting Cosserat shell, ETH, Switzerland, 4 February 2004.

69. A simple time-dependent model for an aging face, University of California, Berkeley, 21 February 2005.

70. A generalized 3-D Cosserat point brick element for nonlinear elasticity: Comparison with other element formulations, University of Alberta, Edmonton, 5 March 2007.

71. An improved 3-D brick Cosserat Point Element (CPE) for nonlinear elasticity. ETH, Zurich, 10 May 2007.

72. Physically based invariants for nonlinear elastic orthotropic materials. Ben Gurion University, 27 March 2008.

73. Surprising failures of the patch test. ISCM-24. The 24th Israel Symposium on Computational Mechanics. Tel Aviv University. 3 April 2008.

74. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity, Earthquake Research Institute, Tokyo University, 4 September 2009.

75. A simple time-dependent model of an aging face. Riken, Tokyo, Japan. 10 September, 2009.

76. Physical Reasons for Abandoning Plastic Deformation Measures in Plasticity and Viscoplasticity, Ehime University, Shikoku, Japan 24 September 2009.

77. Brittleness of fracture in flowing Magma. Earthquake Research Institute, Tokyo University, 30 October 2009.

78. A simple time-dependent model of an aging face. Bioengineering Institute, University of Auckland. 10 November 2009.

79. Physical reasons for abandoning plastic deformation measures in plasticity and viscoplasticity, ETH, Zurich 27 April 2010.

80. A simple time-dependent model of an aging face. University of Aachen. 3 May 2010.

81. Physical reasons for abandoning plastic deformation measures in plasticity and viscoplasticity, University of Trento, Italy 9 June 2010.

82. A simple time-dependent model of an aging face. University of Trento, Italy 14 June 2010.

83. A generalized Cosserat point element (CPE) for nonlinear elasticity. University of Trento, Italy 23 June 2010.

84. Brittleness of fracture of flowing magma. Lawrence Livermore National Laboratory. Livermore, CA, 31 August 2010.

85. Brittleness of fracture of flowing magma. Texas A&M, College Station. 11 November 2010.

86. Brittleness of fracture of flowing magma. Tel Aviv University. 7 March 2011.

87. A quadratic ten node tetrahedral Cosserat point element (CPE) for nonlinear elasticity. ISCM-30 Tel Aviv University, 30 March 2011.

88. The Cosserat Point Element (CPE): A new approach for finite elements. Simulia, Providence RI, 3 August 2011.

89. The Cosserat Point Element (CPE): Physically based invariants for nonlinear elastic orthotropic solids. Simulia, Providence RI, 3 August 2011.

90. The Cosserat Point Element (CPE): Unphysical arbitrariness in constitutive equations for elastically anisotropic nonlinear elastic-viscoplastic solids. Simulia, Providence RI, 3 August 2011.

91. The Cosserat Point Element (CPE): A new approach for finite elements. LSTC, Livermore CA, 9 August 2011.

92. The Cosserat Point Element (CPE): A new approach for finite elements. Schlumberger, Boston MA, 2 September 2011.

93. The Cosserat Point Element (CPE): Physically based invariants for nonlinear elastic orthotropic solids. ETH Zurich, 21 September 2011.

94. A simple time-dependent model of an aging face. HP Indigo, Rehovot. 3 April 2012.

95. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. Lawrence Livermore National Laboratory, 2 August 2013.

96. Removal of unphysical arbitrariness in constitutive equations for elastically anisotropic nonlinear elastic-viscoplastic solids. Lawrence Livermore National Laboratory, 8 August 2014.

97. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. University of Victoria, 10 September 2014.

98. Modeling rate-independent hysteresis in large deformations of preconditioned soft tissues. University of Victoria, 24 September 2014.

99. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. Ecole des Mines, Paris, 16 October 2014.

100. Modeling rate-independent hysteresis in large deformations of preconditioned soft tissues. Ecole Polytechnic, Paris, 26 November 2014.

101. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. Auckland Bioengineering Institute, Auckland, New Zealand, 16 December 2014.

102. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. WINTEC- Waikato Institute of Technology, Rotokauri Campus, Hamilton, New Zealand, 20 February 2015.

103. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. Lawrence Livermore National Laboratory, 21 August 2015.

104. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. ETH Zurich, 30 September 2015.

105. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. Graz University of Technology, 2 October 2015.

106. The importance of Eulerian formulations for anisotropic inelastic material response. Magdeburger Mechanik Kolloquium. Magdeburg University, 11 March 2016.

107. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. University College Dublin, 8 September 2016.

108. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. University College Dublin, 13 September 2016.

109. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. National University of Ireland, Galway, 22 September 2016.

110. Unphysical arbitrariness in constitutive equations for elastically anisotropic nonlinear elastic-viscoplastic solids. Universidad Carlos III, Madrid. 5 October 2016.

111. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. Universidad Carlos III, Madrid. 14 October 2016.

112. A unified theoretical structure for modeling interstitial growth and muscle activation in soft tissues. University of California, Berkeley. 2 November 2016.

113. A new analysis of stresses in arteries based on an Eulerian formulation of growth in tissues. University of California, San Diego. 28 November 2016.

114. A new analysis of stresses in arteries based on an Eulerian formulation of growth in tissues. Auckland Bioengineering Institute, Auckland, New Zealand. 17 January 2017.

115. A new analysis of stresses in arteries based on an Eulerian formulation of growth in tissues. Frederich-Alexander University, Erlangen, Germany 4 May 2017.

116. A new analysis of stresses in arteries based on an Eulerian formulation of growth in tissues. Ben Gurion University, Beer Sheva, 8 June 2017.

117. Advantages of formulating an evolution equation directly for elastic distortional deformation in finite deformation plasticity. CNRS Centre des Materiaux, Paris, France 27 November 2017.

118. A shock velocity expression admitting a closed form Helmholtz free energy with a Mie Gruneisen equation for pressure. Lawrence Livermore National Laboratory, Livermore, CA, 12 January 2018

119. Significant differences in the mechanical modeling of confined growth predicted by the Lagrangian and Eulerian formulations. MIT Media Laboratory. 29 May 2018.

120. A thermomechanical breakage model for shock-loaded granular media, Tufts. 21 September 2018.

121. A unified Eulerian formulation of inelastic response, Columbia University. 25 September 2018.

122. A unified Eulerian formulation of inelastic response, MIT. 28 September 2018.

123. A thermomechanical breakage model for shock-loaded granular media, University of Sydney. 22 November 2018.

TECHNION SEMINARS

1. On The Transition To Planing Of A Boat, Faculty of Mechanical Engineering, 13 December 1982.

2. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, Faculty of Mechanical Engineering, 9 January 1984.

3. On The Theory Of A Cosserat Point And Its Application To The Numerical Solution Of Continuum Problems, Faculty of Aeronautical Engineering, 29 May 1984.

4. Heat Conduction In Plates And Shells With Emphasis On A Conical Shell, Faculty of Mechanical Engineering, 14 January 1985.

5. On The Numerical Solution Of Spherically Symmetric Problems Using The Theory Of A Cosserat Point, Faculty of Mechanical Engineering, 10 November 1986.

6. Dynamic Buckling Of Cylindrical Shells Due To Axial Impact (Theory And Experiment), Faculty of Aeronautical Engineering, 25 March 1988.

7. Hyperbolic Heat Conduction And The Second Law, Faculty of Mechanical Engineering, 4 May 1992.

8. Plasticity Theory Formulated In Terms Of Physically Based Microstructural Variables, Faculty of Mechanical Engineering, 14 March 1994.

9. Modeling Nonlinear Geometric, Material, And Dissipational Properties Of A String Using The Theory Of A Cosserat Point, James H. Belfer Memorial Symposium, 8-10 May 1995.

10. Restrictions On Nonlinear Constitutive Equations For Elastic Shells, 19 June 1995.

11. On A Continuum Model Of An Intrinsic Length Scale, 24 November 1997.

12. Cosserat Theories: Shells, Rods & Points, James H. Belfer Memorial Symposium, 26 October 1998.

13. Numerical Solution Procedures for nonlinear Elastic Rods Using the Theory of a Cosserat Point, 25 January 1999.

14. Modeling Inelastic Response Of Excised Facial Skin And SMAS, Program for Excellent Students, 5 May 1999.

15. Modeling Inelastic Response Of Excised Facial Skin And SMAS, Workshop on Tissue Engineering, October 1999.

16. Multiple Nonlinear Solutions Of A Whirling String, James H. Belfer Memorial Symposium, 11 June 2000.

17. Elimination Of Shear Locking In Thin Elastic Beams Using The Theory Of A Cosserat Point, 20 May 2002.

18. Numerical applications of the theory of a Cosserat Point, 16 December 2002.

19. Restrictions on linear constitutive equations for a rigid heat conducting Cosserat shell, 10 May 2004.

20. A simple time-dependent model for an aging face. 6 January 2005.

21. An improved 3-D brick Cosserat Point Element (CPE) for nonlinear elasticity. 21 May 2007.

22. Brittleness of fracture of flowing magma. 1 November 2010.

23. Modeling a smooth elastic-inelastic transition with a strongly objective numerical integrator needing no iteration. 16 December 2013.