CURRICULUM VITAE

Kurt S. Anderson

Associate Dean - Undergraduate Studies for the School of Engineering
Professor of Mechanical Engineering, Aerospace Engineering and Mechanics
Rensselaer Polytechnic Institute
Department of Mechanical, Aerospace and Nuclear Engineering
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EDUCATION

Ph.D., Applied and Computational Mechanics (9/1990)
Stanford University, Stanford, CA
Dissertation Advisor: Prof. Thomas R. Kane
Research area: Dynamics/control of complex multibody systems (with emphasis on large flexible aerospace systems) through use of efficient low operational order algorithms and parallel computing.

M.S., Mechanical Engineering (12/84)
University of California, Berkeley, CA
Research Advisor: Prof. C. Daniel Mote
Research area: Biomechanical modeling of human limbs and joints, and correlation of associated model parameter values with muscle electrical activity.

B.S., Mechanical Engineering (6/82)
University of California, Berkeley, CA

PROFESSIONAL/ACADEMIC EXPERIENCE

Rensselaer Polytechnic Institute, Troy, NY (9/95-Present)
Associate Dean for Undergraduate Studies (12/2009 – Present)
Professor, Department of Mechanical, Aerospace and Nuclear Engineering
Current Research Areas: Efficient modeling of complex multi-body systems and the use of parallel computing in these applications; Development and extension of Divide and Conquer Algorithms (DCA)-based methods for the optimal (in the sense of maximum aggregate throughput) numerical simulation of the dynamic behavior of complex multibody systems; Systems design optimization; Multiscale-multiphysics dynamical systems analysis; Multi-rate integration methods; Molecular dynamics; MEMS modeling, simulation, assembly and control; Biomechanical dynamic modeling; And, land vehicle dynamics and simulation;.

The Ohio State University, Columbus, Ohio (12/93-8/95)
Assistant Professor, Department of Aeronautical Engineering, Applied Mechanics and Aviation
Member of advisory board for Ohio State University Center for Automotive Research
Research Areas: same as listed for Rensselaer Polytechnic Institute above.

Institut für Mechanik, Technische Hochschule-Darmstadt, Darmstadt, Germany (9/92-11/93)
Alexander von Humboldt Research Fellow: Efficient modeling of general complex multi-flexible-body systems; Vibrations suppression in high-tension power lines; Ultrasonic traveling wave motors.
Host and collaborator: Prof. Dr. Peter Hagedorn

Institut für Mechanik, Technische Hochschule - Darmstadt, Darmstadt, Germany (11/91-8/92)
Gastwissenschaftler (Guest Research Fellow) *Hessian Ministry of Science and Research:* Multibody dynamic simulation with application to parallel computing; Use of Analytical nonlinear dynamics and computational methods for study of tethered satellite dynamics and control.
Host and collaborator: Prof. Dr. Peter Hagedorn

TRW Space and Technology Group, Redondo Beach, CA (7/90-10/91)
Research Scientist, Engineering and Test Division: Modeling of large multi-flexible-body space structures and the use of parallel computing in this application. Modified industrial and *in-house* finite element dynamic analysis codes to perform specialized modal and nonlinear analysis as well as improve code performance and accuracy.
Chief Dynamics Engineer for TOMS satellite: Responsible for all dynamics analysis and testing associated satellite. These responsibilities include separation analysis, deployment analysis and testing, model verification, couple load cycle analysis, and acoustic testing.

Santa Clara University, Santa Clara, CA (9/90-6/91)
Adjunct Lecturer, Department of Mechanical Engineering: Advanced multibody dynamics and computational methods.

Stanford University, Stanford CA. (9/86-8/90)
Research supported by TRW Doctoral Fellowship: Efficient modeling of large multibody dynamic systems.

TRW Space and Technology Group, Redondo Beach, CA (8/84-9/86 Full time)(6/82-8/84, 9/86-9/90 Part time)
Member of technical staff: Development of spacecraft finite element models and special purpose dynamic simulation programs; Development of software for modal test data reduction and test appraisal; modal test design.

AWARDS and HONORS

School of Engineering Education Excellence Award, 2008

Associate Fellow AIAA, 2008

Fellow ASME, 2005

Lewis T. Assini Undergraduate Teaching and Counseling Award, Rensselaer Polytechnic Institute, 2003

NSF Faculty Early Career Development Award, (4/15/98 – 3/31/03)
"Design Parameter Determination for Optimal Dynamic Performance of Complex Multibody Systems"

Summer Faculty Fellowship, Army Research Office / TACOM - American Society of Engineering Education, Summer Faculty Research Program, 1994

NSF Research Initiation Award (2/95 to 10/99)
"Optimal formulation of equation of motion associated with complex multibody systems for subsequent temporal numerical integration using parallel computing"

Alexander von Humboldt Foundation Research Fellowship, Technische Hochschule - Darmstadt, Germany (9/92-11/93)
Alexander von Humboldt Foundation, Bonn, Germany

Research Fellow, Technische Hochschule - Darmstadt, Germany (11/91-8/92)
Hessian Ministry of Science and Research, Wiesbaden, Germany

1992 NASA *Group Achievment Award,* "Advanced Ultra-High Specific Power Solar Array"

1991 TRW *Roll of Honor,* Associate Principal Investigator "Parallel Processing Simulation of Large Space Structures."

Stanford University: TRW Doctoral Fellowship, 1986-90

University of California: Regents Fellowship, 1982-83
Pi Tau Sigma Award for Excellence in Teaching Assistance, 1983
University Academic Senate Citation for Distinguished Teaching Assistance, 1983
Phi Beta Kappa, Pi Tau Sigma, Tau Beta Pi, and Sigma Xi honor societies
Graduated *Summa Cum Laude* 1982

PROFESSIONAL SOCIETIES

MEMBER: The American Academy of Mechanics (AAM), American Institute of Aeronautics and Astronautics (AIAA), American Society for Engineering Education (ASEE), American Society of Mechanical Engineers (ASME), International Association of Computational Mechanics (IACM), U.S. Association of Computational Mechanics (USACM).

PROFESSIONAL ACTIVITIES

Technical Committees

Member Steering committee International Conference on Multibody Systems Dynamics (2009 present)

Member International Federation for the Promotion of Mechanism and Machine Science (IFToMM) Technical Committee for Multibody Dynamic (2009-Present)

Member ASME Design Engineering Division (DED) Executive Committee (2009 to Present)

Chair ASME Design Engineering Division (DED) of publications committee (2009-Present)

Chair ASME Technical Committee on *Multibody Systems and Nonlinear Dynamics* (2007-2009)

Vice-Chair ASME Technical Committee on *Multibody Systems and Nonlinear Dynamics* (2005-2007)

Secretary ASME Technical Committee on *Multibody Systems and Nonlinear Dynamics* (2003-2005)

Member of AIAA Technical Committee for Multi-Disciplinary Optimization (TC MDO) (2000-2003)

Journal Advisory and Editorial Boards

Associate Editor *Mechanisms and Machine Theory,* 2009 – 2011

Advisory Board Journal *Multibody Systems Dynamics* 2006 – Present

Founding Associate Editor ASME *Journal of Computational and Nonlinear Dynamics* (2005-prensent)

Advisory Board journal *Nonlinear Dynamics* (2004- 2010)

Guest Editor *Journal of Multiscale Computational Engineering* (2004)

Advisory Board Member *Journal of Multiscale Computational Engineering* (2003-Present)

Associate Editor AIAA *Journal of Guidance, Control, and Dynamics* (2001-2004)

Conferences, Workshops Organized:

Steering and Scientific Program Committee, Joint International Conference on Multibody Systems Dynamics, Stuttgart, Germany, May 29 - June 1, 2012.

Advisory Committee, ECCOMAS Thematic Conference on Multibody Dynamics, Brussels, Belgium, July 4 - July 7, 2011.

Scientific Program Committee, Joint International Conference on Multibody Systems Dynamics, Lappeenranta, Finland, 25-27 May 2010.

Member Steering Committee, 13th Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems, Blacksburg VA, 2010.

Co-General Chair, *ASME Design Engineering Technical Conference/Computers in Engineering (IDETC/CIE 2009)*, San Diego CA, Aug.30 – Sept 2, 2009 (1221 papers presented).

General Chair, S*eventh International Conference on Multibody Systems, Nonlinear Dynamics and Control*, 2009 (281 papers presented).

Scientific Program Committee, ECCOMAS Thematic Conference on Multibody Dynamics, Warsaw, Poland, June 29- July 2, 2009.

Member Steering Committee, 12th Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems, Blacksburg VA, June 1-5, 2008.

Scientific Program Committee, ECCOMAS Thematic Conference on Multibody Dynamics, Milan, Italy, June 25-28, 2007.

Organizer of NSF, AFoSR,, ARO, NIH, ONR, USDA Workshop "New Frontiers in Dynamic Systems", Arlington VA, March 1 & 2, 2007

Program Chair for *5th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, as part of *ASME 2005 Design Engineering Technical Conferences*, Long Beach, CA.

U.S. Co-organizer for *4th International Symposium on Multibody Dynamics and Vibrations*, as part of *ASME 2003 Design Engineering Technical Conferences*, Chicago IL.

Symposia Organization

Co-Organizer, [invited symposium] "Theoretical and Computational Methods", *Joint International Conference on Multibody Dynamics*, Stuttgart Germany, May 29 - June 1, 2012.

Co-Organizer, [invited symposium] "Symposium on Algorithms and Integration Methods", *8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC Aug. 28-31, 2011

Symposium Chair [invited symposium], "Theoretical and Computational Method", *International Conference on Multibody Systems Dynamics*, Lappenenranta, Finaland, May 25-27, 2010.

Organizer, "Prakash Krishnaswami Memorial Symposium", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, Aug. 30- Sept. 2, 2009

Organizer, "Symposium on Aerospace Applications", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, Aug. 30- Sept. 2, 2009

Co-Organizer, [Invited Symposium] "Symposium on Efficient Methods and Real-Time Application", *ECCOMAS Thematic Conference on Multibody Dynamics*, Warsaw, Poland, June 29 – July 2, 2009

Co-Organizer, "Symposium on Aerospace Applications", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Co-Organizer, [invited symposium] "Symposium on Algorithms and Integration Methods", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Co-Organizer, "Symposium on Molecular Dynamics: Methods and Applications", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Co-Organizer, [invited symposium] "Symposium on Real-Time Simulation", *ECCOMAS Thematic Conference on Multibody Dynamics*, Milan, Italy, June 25-28, 2007

Organizer, "Symposium on Aerospace Applications", *5th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA, Sept . 24-28, 2005

Organizer, "Symposium on Algorithms and Integration Methods", *5th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA, Sept. 24-28, 2005

Miscellaneous

ABET Aero Program Directory, Rensselaer Polytechnic Institute (2005-2010)

U.S. organizer (one of two) for *4th International Symposium on Multibody Dynamics and Vibrations*, as part of *ASME 2003 Design Engineering Technical Conferences*, Chicago IL.

Conference Sessions Chaired:

Co-Organizer, [invited session] "ASME Design Division Journals Panel – A meeting with the Editors", *ASME Design Engineering Technical Conferences/Computers in Engineering (IDETC/CIE2011)*, Washington, DC Aug. 28-31, 2011.

Session Chair, "Flexible Multibody Dynamics VI", *ECCOMAS Thematic Conference on Multibody Dynamics*, Brussels, Belgium July 4-7, 2011.

Session Chair, "Algorithms and Integration Methods I: Algorithms and Integration Methods", *8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC, Aug. 28-31, 2011

Session Chair, "Algorithms and Integration Methods III: Novel Methods and Nonlinear Dynamics", *8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC, Aug. 28-31, 2011.

Session Chair, "Efficient Methods and Real-Time Application", *ECCOMAS Thematic Conference on Multibody Dynamics*, Warsaw, Poland, June 29 – July 2, 2009

Session Chair, "Aerospace Applications", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Session Chair, "Algorithms and Integration Methods III: Parallel Computing Methods", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Session Chair, "Molecular Dynamics: Methods and Applications I: Efficient Methods", *6th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Las Vegas, NV Sept. 4-7, 2007

Session Chair, "Real-Time Simulation", *ECCOMAS Thematic Conference on Multibody Dynamics*, Milan, Italy, June 25-28, 2007

Session Chair- Session 2: Micro-device Applications, *Eleventh Conference on Nonlinear Vibrations, Stability, and the Dynamics of Structures*, Blacksburg, VA August 13-17, 2006.

Session Chair- Session 6: Cable Dynamics, *Eleventh Conference on Nonlinear Vibrations, Stability, and the Dynamics of Structures*, Blacksburg, VA August 13-17, 2006.

Symposium Organizer, Multiscale Applications, *ASME Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA. Sept. 24-28 2005

Session Chair- Tool and Techniques for Mechanical Systems Simulation, *ASME Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA. Sept. 24-28 2005

Session Chair- Differential Algebraic Equations (DAEs), *ASME Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA. Sept. 24-28 2005

Session Chair- Multiscale Modeling in Multibody Systems, *ASME Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Long Beach, CA. Sept. 24-28 2005

Session Chair, Session IV – Analytic and Computational Methods, *10th Conference on Nonlinear Dynamics, Stability, and Dynamics of Structures*, Blacksburg, VA, July 25-29, 2004.

Session Chair, Session XII – Impact and Friction in Dynamic Systems, *10th Conference on Nonlinear Dynamics, Stability, and Dynamics of Structures*, Blacksburg, VA, July 25-29, 2004.

Session Chair, Vehicle Dynamics II, *ASME 2003 Design Engineering Technical Conferences*, Chicago IL, September 2-6, 2003.

Session Chair, Finite Element Methods in Multibody Dynamics, *ASME 2001 Design Engineering Technical Conferences*, Pittsburgh PA, September 9-12, 2001.

Session Chair, Computational Methods in Dynamics and Acoustics, *ASME 1997 Design Engineering Technical Conferences*, Sacramento CA, September 14-17, 1997.

Session Chair, Impact Dynamics, *ASME 1997 Design Engineering Technical Conferences*, Sacramento CA, September 14-17, 1997.

PUBLICATIONS
Refereed Journal Articles:

1. I. Khan, M. Poursina, K.S. Anderson, "DCA-Based Optimization in Transitioning to Finer Models in Articulated Multi-Flexible-Body Biopolymers", *ASME Journal of Computational and Nonlinear Dynamics*, in review

2. M. Poursina, K.S. Anderson, "Efficient Force and Moment Calculation in Multi-resolution Modeling of Biopolymers", *Journal of Computational Chemistry*, in review

3. M. Poursina, K.S. Anderson, "Constant Temperature Simulation of Articulated Polymers Using a Divide-and-Conquer Algorithm", *Journal of Physical Chemistry*, in review

4. M. Poursina, K.S. Anderson, "Generalized Divide-And-Conquer Algorithm (GDCA) For Constrained Multibody Systems", *Multibody System Dynamics*, in review

5. M. Poursina, K.D. Bhalerao, K.S. Anderson, "On Adaptive Multiscale Modeling of Biomolecular Systems with Application in RNA", *Computational Chemistry* (In review)

6. K.D. Bhalerao, C. Crean and K.S. Anderson, "Hybrid complementarity formulations for robotics applications", *Zeitschrift für Angewandte Mathematik und Mechanik*, doi:

10.1002/zamm.201000093, vol. 91(5), pp. 386-399, 2011.

7. K.D. Bhalerao and K.S. Anderson, "Modeling intermittent contact for flexible multibody systems", *Nonlinear Dynamics*, doi:10.1007/s11071-009-9580-2, vol. 60(1-2), pp. 63-79, 2010.

8. K.D. Bhalerao, M. Poursina and K.S. Anderson, "An efficient direct differentiation approach for sensitivity analysis of flexible multibody systems", *Multibody System Dynamics*, doi:10.1007/s11044-009-9176-0, vol. 23(3), pp. 121-140, 2010.

9. S. Berard, J.C. Trinkle, K.S. Anderson, "Sources of Error in a Simulation of Rigid Parts on a Vibrating Rigid Plate", *ASME Journal of Computational and Nonlinear Dynamics*, Vol. 5, No. 4, doi:10.1115/1.4001820 , 2010

10. K.D. Bhalerao, K.S. Anderson, J.C. Trinkle, "A Hybrid Time-Stepping Scheme for Intermittent in Multi-Rigid-Body Dynamics", *ASME Journal of Computational and Nonlinear Dynamics*, 4(4), 041010, 2009.

11. C.G. Ballard, K.S. Anderson, and L.N. Myrabo "Flight Dynamics Simulation of Lightcraft Propelled by Laser Ablation", *ASME Journal of Computational and Nonlinear Dynamics*, Vol. 4, No. 4, doi:10.1115/1.3187214, 2009.

12. J.H. Critchley, A. Binani, and K.S. Anderson, "Design and Implementation of an Efficient Multibody Divide and Conquer Algorithm", ASME Journal of *Computational and Nonlinear Dynamics*, Vol.4, No. 2, March 2009

13. R.M. Mukherjee, P.S. Crozier, S.J. Plimpton, and K.S. Anderson, "Substructured Molecular Dynamics using Multibody Dynamics Algorithms", International Journal of Non-Linear Mechanics on *Nonlinear Mechanics and Dynamics of Macromolecules,* Vol.43 (10), p.1040-1055, Dec 2008

14. R. Mukherjee, and K.S. Anderson, "Efficient Methodology for Multibody Simulations with Discontinuous Changes in System Definition", by *Multibody Systems Dynamics,* Vol.18, No. 2, pp. 145-168, 2007.

15. K.S. Anderson, R.Mukherjee, J.H. Critchley, J. L. Ziegler, and S.R. Lipton "POEMS: Parallelizable Open-Source Efficient Multibody Software", *Engineering with Computers*, Vol. 23, No. 1, pp 11-23, 2007.

16. R. Mukherjee, K. Bhalerao, and K.S. Anderson, "A Divide and Conquer Direct Differentiation Approach for Multibody System Sensitivity Analysis", *Structural and Multidisciplinary Optimization,* Available on-line at http://www.springerlink.com Paper DOI10.1007/s00158-007-0142-2, 2007.

17. R. Mukherjee and K.S. Anderson, "A Logarithmic Complexity Divide-and-Conquer Algorithm for Multi-Flexible Articulated Body Systems", ASME Jounal of *Computational and Nonlinear Dynamics,* Vol. 2, No. 1, pp.10-21, 2007.

18. R. Mukherjee and K.S. Anderson, "An Orthogonal Complement – Based Divide-and-Conquer Algorithm for Constrained Multbody Systems", *Nonlinear Dynamics,* Vol. 48, No. 1-2, pp 199-215, April 2007

19. M. Oghbaei and K.S. Anderson, "A New Time-Finite-Element Implicit Integration Scheme for Multibody System Dynamics Simulation", *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, pp.7006-7019, 2006.

20. O. Gundogdu, K.S. Anderson, and M. Parnianpour, "Simulation of Manual Materials Handling: Biomechancial Assessment Under Different Lifting Conditions" *Health and Technology*, Vol 13, pp 57-66, 2005

21. O. Gundogdu, K.S. Anderson, and M. Parnianpour, "Development of a Genetic Algorithm Based Biomedical Simulation of Sagittal Lifting Tasks", *Biomedical Engineering,* Vol 17, No. 1, pp 12-19, 2005

22. K.S. Anderson and M. Oghbaei, "A State-Time Formulation for Dynamic Systems Simulations Using Massively Parallel Computing Resources", Journal *Nonlinear Dynamics,* Vol. 39, pp. 305-318, 2005.

23. K.S. Anderson and M. Oghbaei , "Dynamic Simulation of Multibody Systems Using A New State-Time Methodology", *Multibody System Dynamics.* Vol. 14, pp. 61-80, 2005.

24. J.H. Critchley and K.S. Anderson, "Parallel Logarithmic Order Algorithm for General Multibody System Dynamics", *Multibody System Dynamics*, Vol. 12, No. 1, pp. 75-93, August 2004.

25. K.S. Anderson and Y.H. Hsu, " 'Order-*(n+m)*' Direct Differentiation Determination of Design Sensitivity for Constrained Multibody Dynamic Systems, " *Structural and Multidisciplinary Optimization,* Vol. 26, No 3-4, pp.171-182, February 2004.

26. J.H. Critchley and K.S. Anderson, "Generalized Recursive Coordinate Reduction Method for Multibody System Dynamics", *Journal for Multiscale Computational Engineering*, Vol. 1, No. 2, pp. 181-199, 2003.

27. K.S. Anderson and J.H. Critchley, "Improved *Order-n* Performance Algorithm for the Simulation of Constrained Multi-Rigid-Body Systems", *Multibody Systems Dynamics,* Vol. 9, pp. 185-212, 2003.

28. Y.H. Hsu and K.S. Anderson, "Recursive Sensitivity Analysis for Constrained Multi-Rigid-Body Dynamic Systems", *Structural and Multidisciplinary Optimization,* Vol. 24, No.4, pp 312-324, October 2002.

29. K.S. Anderson and Y.H. Hsu, "Analytical Full-Recursive Sensitivity Analysis for Multibody Chain Systems", *Multibody Dynamic Systems,* Vol. 8, No. 1, pp.1-27, August

2002.

30. K.S. Anderson and Y.H. Hsu, “Domain Approximation and Deterministic Progression in Genetic Crossover”, Journal *Engineering Optimization*, Vol. 33, pp. 683-706, 2001.

31. Y.H. Hsu and K.S. Anderson, “Low Operational Order Analytic Sensitivity Analysis for Tree-Type Multibody Dynamic Systems”, AIAA *Journal of Guidance, Control and Dynamics,* Vol. 24, No. 6, pp. 1133-1143, Nov.-Dec. 2001.

32. Kopmaz and K.S. Anderson, “On the Eigenfrequencies of a Flexible Link Arm Driven by a Flexible Shaft,” *Journal of Sound and Vibration*, Volume 240, No.4, pages 679-704, March 2001.

33. Kopmaz and K.S. Anderson, “Identification of Nodal and Antinodal Lines Locations of Plates with Virtual Elements”, journal *Mathematical and Computer Modelling* Vol. 10, 2000

34. K.S. Anderson and S. Duan, “Highly Parallelizable Low Order Dynamics Algorithm for Complex Multi-Rigid-Body Systems”, *AIAA Journal of Guidance, Control and Dynamics*. Vol. 23, No. 2, pp. 355-364 March-April, 2000.

35. S. Duan and K.S. Anderson , “Parallel Implementation of a Low Order Algorithm for Dynamics of Multibody Systems on a Distributed Memory Computing System,” Journal *Engineering with Computers*, vol. 16, No. 2, pp 96-108, 2000.

36. K.S. Anderson and S. Duan, " A Hybrid Parallelizable Low Order Algorithm for Dynamics of Multi-Rigid-Body Systems: Part I, Chain Systems ", Journal *Mathematical and Computer Modelling,* Vol. 30, pp. 193-215, 1999.

37. K.S. Anderson and Gundogdu. “Optimal Trajectory Determination for Sagitally Symmetric Manual Lifting Tasks”, Mathematical & Computational Applications, Vol. 4, No.2, pp.169-174, 1999.

38. K.S. Anderson, “Efficient Modeling of General Multibody Dynamic Systems with Flexible Components,” *Computational Dynamics in Multibody Systems*, Editors: M.S. Pereira, and J.A.C. Ambrosia, Kluwer Academic Press, Dordrecht, The Netherlands, 1995.

39. K.S. Anderson, P. Hagedorn, “On the Energy Dissipation in Spacer-Dampers in Bundled Conductors of Overhead Transmission Lines,” *Journal of Sound and Vibration*, Vol. 180, Nr. 4, pp. 539-556, 1995.

40. K.S. Anderson, P. Hagedorn, “On the Control of Orbital Drift of Geostationary Tethered Satellites,” *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 17, Nr. 1, pp. 10-16, 1994.

41. K.S. Anderson, "An Efficient Formulation for the Modeling of General Multi-Flexible-Body Constrained Systems" *International Journal of Solids and Structures*, Vol. 30, No. 7, pp. 921-945, 1993.

42. K.S. Anderson, "An Efficient Modeling of Constrained Multibody Systems for Application with Parallel Computing," *Zeitschrift für Angewandte Mathematik und Mechanik*, Vol. 73, No. 6, pp. 935-939, 1993.

43. K.S. Anderson, "An Order-N Formulation for the Motion Simulation of General Constrained Multi-Rigid-Body Systems," *Computers and Structures*, Vol. 43, Nr. 3, pp. 565-579, 1992.

44. K.S. Anderson, "An Order-N Formulation for the Motion Simulation of General Multi-Rigid-Body Tree Systems," *Computers and Structures*, Vol. 46, Nr. 3, pp. 547-559, 1991.

Books, Monographs, Book Chapters:

1. Contribution to book *Computational Methods in Applied Sciences:* Multibody Dynamics″, edited by C. Bottasso. Springer Publishing, ISBN978-1-4020-8828-5

2. Contribution to book *Methods in Enzymology,* "Strategies for adaptive rigid body molecular dynamics simulations of RNA" Book Chapter (http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=21187222)

Conference Proceedings:

1. M. Poursina, J. Laflin, K.S. Anderson, "Fast Electrostaic Force and Moment Calculation in Multibody-Based Simulation fo Coarse-Grained Biopolymers", Paper DETC2011-48376*, 8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC, August 28-31, 2011

2. M. Poursina, K.S. Anderson, "Multibody Dynamics in a Generalized Divide-And-Conquer Algorithm (GDCA) Scheme", *Paper* DETC2011-48383, *8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC, August 28-31, 2011

3. Khan, M. Poursina, K.S. Anderson, "Model Transitions and Optimization Problem in Multi-flexible-body Modeling of Biopolymers", Paper DETC2011-48386 , *8th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, Washington, DC, August 28-31, 2011.

4. Khan, M. Poursina, K.S. Anderson, "DCA-Based Optimization in Transitioning to Finer Models in Articulated Multi-Flexible-Body Biopolymers", *ECCOMAS Thematic Conference – Multibody Dynamics 2011*, Brussels, Belgium, July 4-7, 2011

5. M. Poursina, K.S. Anderson, "Efficient Force and Moment Calculation in Multi-resolution Modeling of Biopolymers", *ECCOMAS Thematic Conference – Multibody Dynamics 2011*, Brussels, Belgium, July 4-7, 2011

6. M. Poursina, K.S. Anderson, "Constant Temperature Simulation of Articulated Polymers Using a Divide-and-Conquer Algorithm", *ECCOMAS Thematic Conference – Multibody Dynamics 2011*, Brussels, Belgium, July 4-7, 2011

7. M. Poursina, K.S. Anderson, "Generalized Divide-And-Conquer Algorithm (GDCA) For Constrained Multibody Systems", *Multibody System Dynamics*, in review

8. M. Poursina, K.S. Anderson, "Efficient Force and Moment Calculation in Articulated Multiscale Molecular Systems", *ECCOMAS Thematic Conference – Coupled Problems 2011*, Isle of Kos, Greece, June 20-22, 2011

9. K. Bhalerao, M. Poursina, and K.S. Anderson, "Divide –And-Conquer Base Adaptive Course Grained Simulation of RNA", ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology, NEMB2010, February 7-10, 2010, Houston, TX, USA

10. B.D. Bhalerao, K.S. Anderson, J.R Trinkle, "A Recursive Hybrid Time-Stepping Scheme For Intermittent Contact In Multi-Rigid-Body Dynamics", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

11. M. Poursina, K.S. Anderson, "Energy Concern in Biomolecular Simulations Involving Transitions From Coarse to Finer Grain Models", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

12. M. Poursina, K.S. Anderson, "Optimization Problem in Biomolecular Simulations with DCA-Based Modeling of Transition from A Coarse to A Fine Fidelity," *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

13. R.M. Mukherjee, K.S. Anderson, "Generalized Orthogonal Complement Based Divide and Conquer Algorithm for Constrained Multibody Dynamics", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

14. R.M. Mukherjee, K.S. Anderson, "Efficient Impulse Momentum Formulation For Multi-Flexible-Body Systems", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

15. K.D. Bhalerao, M. Poursina, K.S. Anderson, "Logarithmic Complexity Sensitivity Analysis Of Flexible Multibody Systems" *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2,

2009

16. K.S. Anderson, R. Mukherjee, "On Adaptivity In Coarse Grain Molecular Dynamics", *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30- September 2, 2009

17. D. Kenoyer, K. Anderson, L. Myrabo, "Trajectory Simulations for Laser-Launched Microsatellites Using a 7-DOF Flight Dynamics Model" *7th International Conference on Multibody Systems, Nonlinear Dynamics and Control*, San Diego, CA, August 30-September 2, 2009

18. K. Bhalerao, K.S Anderson,"Recursive Approach to Modeling Contact in Flexible Body Systems", *ECCOMAS Thematic Conference – Multibody 2009*, Warsaw, Poland, June 29-July 2, 2009

19. R.M. Mukherjee and K.S Anderson,"A Robust Framework for the Modeling and Simulation of Biopolymers", *ECCOMAS Thematic Conference – Multibody 2009*, Warsaw, Poland, June 29-July 2, 2009

20. K.S. Anderson, M. Poursina, K. Bhalerao, "Energy Concern in Biomolecular Simulation With Discontinuous Changes in System Definition" *ECCOMAS Thematic Conference – Multibody 2009*, Warsaw, Poland, June 29-July 2, 2009

21. K. Bhalerao, M. Poursina, and K.S. Andeson, "Recursive Direct Differentiation Sensitivity Analysis of Flexible Body Systems", *ECCOMAS Thematic Conference – Multibody 2009*, Warsaw, Poland, June 29-July 2, 2009

22. "Coarsification of Large Biomolecular Systems", by K. Bhalerao and K. Anderson, *Twelfth Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems*, Blacksburg VA, June 1-5, 2008

23. "A Generalized Momentum Method for Multi-Flexible Body Systems for Model Resolution Change", by R. M. Mukherjee, and K. S. Anderson,, *Twelfth Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems*, Blacksburg VA, June 1-5, 2008

24. "Sensitivity Analysis of Multi-Flexible-Body Systems", M. Poursina, K. Bhalerao, and K.S. Anderson, *Twelfth Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems*, Blacksburg VA, June 1-5, 2008

25. K. Bhalerao, R. Mukherjee, K.S. Anderson, "Model Reduction of Multibody Systems Using Divide and Conquer Based Sensitivity Analysis", *ECCOMAS Thematic Conference – Multibody 2007*, Milano, Italy, June 25-28, 2007

26. Binani, C.H. Critchely, and K.S. Anderson, "A Comparison of Three Different Linear Order Multibody Dynamics Algorithms iun limited Parallel Computing Environments",

ECCOMAS Thematic Conference – Multibody 2007, Milano, Italy, June 25-28, 2007

27. R. Mukherjee, and K. S. Anderson, "Adaptive Multibody Molecular Dynamics", *ECCOMAS Thematic Conference – Multibody 2007*, Milano, Italy, June 25-28, 2007

28. K.S. Anderson, "An Orthogonal Complement Base Divide and Conquer Framework from the Modeling and Simulation of Complex Molecular Dynamic Systems", *International Conference on SCIentific Computation And Differential Equations* (SciCADE 2007), Saint –Malo, France, July 9-13, 2007

29. Binani, J.H. Critchley, and, K.S. Anderson, " Design and Implementation of an Efficient Multibody Divide and Conquer Algorithm", *Sixth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

30. R. Mukherjee and K.S Anderson, "Efficient Methodology for Multibody Simulations with Discontinuous Changes in System Definition", *Sixth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

31. R. Mukherjee and K.S. Anderson, "Holonomic Constraint Imposition for Constrained Multibody Dynamics Systems" Sixth *International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

32. R. Mukherjee, P. Crozier, and K. Anderson, "Multibody Molecular Dynamics I : Theoretical Development*"*, *Sixth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

33. ,R. Mukherjee, P. Crozier, and K. S. Anderson "Multibody Molecular Dynamics II : Applications and Results", *Sixth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

34. C.G. Ballard, K. Anderson, and L.Myrabo "Flight Dynamics and Simulation of Laser Propelled Lightcraft", , *Sixth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Las Vegas, NV, September 4-7, 2007.

35. R. M. Mukherjee and K. S. Anderson, "Efficient Methodology for Multi-Scale Multibody Systems Undergoing Instantaneous Transitions in Model Resolutions", *Eleventh Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures*, Blacksburg, VA, August 13-17, 2006.

36. R. M. Mukherjee, K.D. Bhalerao and K. S. Anderson, "A Divide and Conquer Direct Differentiation Approach for Multibody System Sensitivity Analysis", *Eleventh Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures*, Blacksburg, VA, August 13-17, 2006.

37. S. Derby, K. Anderson, S. Winckler, J. Winckler, "Motion Characteristics of a Square Wheel Car", *ASME 2006 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, September 10-13, 2006, Philadelphia, PA.

38. C.G. Ballard, K.S. Anderson, and L.N. Myrabo, "Flight Dynamics Simulation of Lightcraft Propelled by Laser Ablation", *SPIE Conference on High-Power Laser Ablation*, Taos, NM, May7-11, 2006.

39. R. M. Mukherjee and K. S. Anderson, "Efficient Methodology for Multi-Scale Multibody Systems Undergoing Instantaneous Transitions in Model Resolutions", *Eleventh Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures*, Blacksburg, VA, August 13-17, 2006.

40. R. M. Mukherjee, K.D. Bhalerao and K. S. Anderson, "A Divide and Conquer Direct Differentiation Approach for Multibody System Sensitivity Analysis", *Eleventh Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures*, Blacksburg, VA, August 13-17, 2006.

41. J. Evans, M. Oghbaei, and K. Anderson, "Treatment of Aerodynamics Loads in the Dynamics Simulation of a Laser Powered Lightcraft", J. Evans, M. Oghbaei, and K. Anderson, Tech Valley Engineering Symposium, Schenectady, NY, April 5, 2005.

42. R. Mukherjee, J. Ziegler, and K. Anderson, "Multigranular Molecular Dynamic Simulatoin of Polymer Melts Using Multibody Algorithms", Tech Valley Engineering Symposium, Schenectady, NY, April 5, 2005.

43. J. Ziegler, R. Mukherjee, and K. Anderson "A $O(\log_2 N)$ Complexity Divide and Conquer Algorithm for Flexible Multibody Dynamics", Tech Valley Engineering Symposium, Schenectady, NY, April 5, 2005.

44. , R. Mukherjee, and K. Anderson, "A Divide and Conquer Algorithm for Parallel O(log(n)) Calculation of Flexible Articulated Body Dynamics", *ECCOMAS Thematic Conference – Multibody 2005*, Madrid, Spain, June 21-24, 2005

45. R. Mukherjee, J. Ziegler, and K.S. Anderson, "Parallelizable Open source Efficient Multibody Software (POEMS) and its Application in Polymer Chain Dynamics" *ECCOMAS Thematic Conference – Multibody 2005*, Madrid, Spain, June 21-24, 2005

46. M.J. Sadowski, K.S. Anderson, "An Efficient Method for Contact/Impact Problems in Heavily Constrained Multibody Systems", *ECCOMAS Thematic Conference – Multibody*

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47. M. Oghbaei, K.S. Anderson, "An Implicit Integration Scheme for Multibody System Dynamics Simulations Using a New State-Time Formulation", *ECCOMAS Thematic Conference – Multibody 2005*, Madrid, Spain, June 21-24, 2005

48. M. Oghbaei, K.S. Anderson, "Parallel Implementation of a State-Time Dynamic Simulation Algorithm with Potential Scalability to Massively Parallel Computing Resources", *ECCOMAS Thematic Conference – Multibody 2005*, Madrid, Spain, June 21-24, 2005

49. J. Evans, M. Oghbaei, K.S. Anderson, "Dynamic Simulation of a Laser-Powered Lightcraft Using a New State-Time Methodology", *ECCOMAS Thematic Conference – Multibody 2005*, Madrid, Spain, June 21-24, 2005

50. M. Oghbaei, K.S. Anderson, "A State-Time Formulation for Multibody Systems Dynamics Simulation , Part I: Extension to Systems with General Topology", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

51. M. Oghbaei, K.S. Anderson, "A State-Time Formulation for Multibody Systems Dynamics Simulation , Part II: Parallel Implementation", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

52. R. Mukherjee, K.S. Anderson, "A Logarithmic complexity Divide and Conquer Algorithm for Flexible Multibody Dynamics", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

53. M. Oghbaei, K.S. Anderson, "A New Implicit Integration Scheme for the Simulation of Stiff-Complex Mechanical Systems", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

54. M.J. Sadowski, K.S. Anderson,"An Efficient Method for a Category of Contact/Impact Problems in Multibody Systems: Tree Topologies", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

55. J.A. Evans, M. Oghbaei, K.S. Anderson, "Modeling and Simulation of a Laser-Powered Lightcraft Using Advanced Simulation Tools", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

56. J.H. Critchley, R. Mukherjee, J. Ziegler, K.S. Anderson, "POEMS: Parallelizable Open-source Efficient Multibody Software", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

57. R. Mukherjee, K.S. Anderson, "Multigranular Molecular Dynamics Simulations of Polymer Melts using Multibody Algorithms", *Fifth International Conference on Multibody Systems, Nonlinear Dynamics and Control, ASME International Design Engineering Technical Conference*, Long Beach, CA, September 21-26, 2005.

58. K.S. Anderson and M. Oghbaei, "State-Time Formulation for the Modeling and Simulation of Multibody Systems Using Massively Parallel Computing Resources" *Tenth Conference On NONLINEAR VIBRATIONS, STABILITY, AND DYNAMICS OF STRUCTURES*, Blacksburg, VA July 25-29, 2004.

59. K.S. Anderson and J.H. Critchley, "A Generalized Recursive Coordinate Reduction Method for Multibody Systems Dynamics", Paper DETC2003/VIB-48316, *4th International Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2003 (DETC2003)*, Chicago, IL, Sept. 2-6, 2003.

60. J.H. Critchley and K.S. Anderson, "A Method for Both Time and Processor Optimal Parallel Computer Application to Dynamic Systems Simulation", Paper DETC2003/VIB-48317, *4th International Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2003 (DETC2003)*, Chicago, IL, Sept. 2-6, 2003.

61. K.S. Anderson and M.J. Sadowski, "An Efficient Method for Contact/Impact Problems in Multibody Systems: Tree Topologies", Paper DETC2003/VIB-48339, *4th International Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2003 (DETC2003)*, Chicago, IL, Sept. 2-6, 2003.

62. K.S. Anderson and M.J. Sadowski, "An Efficient Method for Contact/Impact Problems in Multibody Systems: Topologies with Many Loops", Paper DETC2003/VIB-48340, *4th International Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2003 (DETC2003)*, Chicago, IL, Sept. 2-6, 2003.

63. D.O. Popa, K.S. Anderson, M.J. Sadowski, J.T. Wen, H.E. Stephanou, and A.A Geisberger, "Efficient Dynamic Simulation and Input Shaping of Microstructures" Paper IMECE03-41995**,** 2003 ASME International Mechanical Engineering Congress, November 15-21, 2003, Washington, DC.

64. K.S. Anderson, " Improved Order-*n* Performance algorithm for the Simulation of Constrained Multi-Rigid-Body Systems", Paper DETC2001/VIB-21335, *3rd Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2001 (DETC01)*, Pittsburgh, Sept. 9-12, 2001.

65. Y.H. Hsu and K.S. Anderson, "Efficient Direct Differentiation Sensitivity Analysis for General Multi-rigid-body Dynamic Systems", Paper DETC2001/VIB-21334, *3rd Symposium on Multibody Dynamics and Vibrations-ASME Design Engineering Technical Conference 2001 (DETC01)*, Sept. 9-12, 2001.

66. K.S.Anderson, "*Order-(n+m)* Direct Differentiation Determination of Design Sensitivity for Constrained Multibody Dynamic Systems" accepted for *6th US National Congress on Computational Dynamics*, to be held in Dearborne, Michigan, August 2001.

67. K.S. Anderson and Y.H. Hsu, "Analytical Full-Recursive Sensitivity Analysis for Multibody System Design", *20th International Congress of Theoretical and Applied Mechanics (ICTAM 2000)*, August 27 – September 2, 2000, Chicago IL, GG07.

68. K.S. Anderson and Y.H. Hsu, "Efficient Sensitivity Analysis for Optimal Design of Multibody Dynamics Tree Systems", *ASME International Mechanical Engineering Congress and Exposition (IMECE 2000)*, November 5-10, 2000, Orlando, FL.

69. K.S. Anderson, "Optimal Design Determination for Complex Multibody Dynamic Systems", *2001 NSF Design, Service and Manufacturing Grantees and Research Conference*, January, 2001, Tampa, FL.

70. K.S. Anderson and Y.H. Hsu "Genetic Crossover Strategy Using an Approximation Concept", *Congress on Evolutionary Computation*, July 6-9, 1999, Washington D.C., pp. 527-533.

71. K.S. Anderson and S.Z. Duan, "A Highly Parallelizable Algorithm for the Dynamics of Rigid Body Chain Systems", *ASME Design Engineering Technical Conference 1999, (DETC99)* September 12-16, 1999, Las Vegas NV, Proceedings Paper DETC99/VIB-8207 (CD-ROM)

72. K.S. Anderson and S.Z. Duan, "A New Order-N Order-N^3 Hybrid Parallelizable Algorithm For Multi-Rigid-Body Systems", *ASME Design Engineering Technical Conference 1999, (DETC99)* September 12-16, 1999, Las Vegas, NV., Proceedings Paper DETC99/VIB-8208 (CD-ROM)

73. K.S. Anderson and S.Z. Duan, "Equations of Motion of Spool Values with Eccentric Clearances", *ASME Design Engineering Technical Conference 1999, (DETC99)* September 12-16, 1999, Las Vegas, NV., Proceedings Paper DETC99/VIB-8212 (CD-ROM)

74. K.S. Anderson and S.Z. Duan, "Implementation of a New Algorithm for Dynamics", *ASME Design Engineering Technical Conference 1999, (DETC99)* September 12-16, 1999, Las Vegas, NV., Proceedings Paper DETC99/VIB-8254 (CD-ROM)

75. O. Kopmaz and K.S. Anderson, "Identification of Nodal and Antinodal Lines Locations of Plates with Virtual Elements", *Twelfth International Conference on Mathematical and*

Computer Modeling and Scientific Computing, August 2-4, 1999, Chicago Illinois

76. K. Anderson, Y. Hsu "Genetic Algorithm Crossover Strategy for Enhanced Solution Space Exploration", Paper Number AIAA-98-4972, *7th AIAA/USAF/NASA/ISSMO Symposium Multidisciplinary Analysis and Optimization,* September 2-4, 1998, St. Louis, MO.

77. K. Anderson, Y. Hsu, "Crossover Strategy for Improved Solution Space Exploration with Genetic Algorithms", Paper Number DETC98/DAC-5617, *ASME Design Engineering Technical Conference,* September 13-16, 1998, Atlanta GA.

78. K. Anderson, "Parallel $O(\log_2 N)$ Algorithm for the Motion Simulation of General Multi-Rigid-Body Mechanical Systems", Proceedings of *Symposium on Multibody Dynamics and Vibrations* of the ASME 16th Biennial Conference on Mechanical Vibration and Noise, held September 14-17,1997, in Sacramento, California.

79. K.S. Anderson, and J.Schwentker, "An Efficient Simulation Parallel Procedure for an Articulated Total Body Model With Sliding Seat Belt Constraints", *McNU'97* Joint summer meeting of the ASCE, ASME, and SES, at Northwestern University, June 29-July 2, 1997.

Abstracts, Letters of Correspondence, Book Reviews, etc.

"Book Review on *Taschenbuch der Mathematik*, edited by I.N. Bronstein,,et.al." Kurt Anderson, *Applied Mechanics Reviews*, Vol. 47, No. 5, May 1994, pp. B50.

"Book Review on *Computational Kinematics*, edited by J. Angeles, et.al." Kurt Anderson, *Applied Mechanics Reviews*, Vol. 48, No. 1, January 1995, pp. B1.

"Book Review on *Variational Methods and Complementary Formulations in Dynamics*, by B. Tabarrok and F.P.J. Rimrott" Kurt Anderson, *Applied Mechanics Reviews*, Vol. 48, No. 8, August 1995, pp. B107.

"Book Review on *Classical Mechanics: A Modern Perspective, Second Edition*, by V.D. Barger and M.G. Olsson" Kurt Anderson, *Applied Mechanics Reviews*, Vol. 49, No. 3, March 1996, pp. B31.

"Book Review on *Kinematics and Dynamics of Machinery*, by V. Stejskal and M. Valasek" Kurt Anderson, *Applied Mechanics Reviews*, Vol. 50, No. 1, January 1997, pp. B2.

"Book Review on *Fractional Analysis: Methods of Motion Decomposition*, by I.V. Novozhilov" Kurt Anderson, *Applied Mechanics Reviews*, Vol. 50, No. 11, November 1997, pp. B106.

"Book Review on *Advanced Dynamics*, by Shuh-Jing Ying" Kurt Anderson, *Applied Mechanics Reviews*, Vol. 52, No. 1, 1999 pp.B1

"Book Review on *Engineering Mechanics: Dynamics*, by R. Soutas-Little and D. Inman", by Kurt Anderson, *Applied Mechanics Reviews*, Vol. 52, No. 7, pp.B70, 1999.

"Book Review on *Analytic Dynamics*, by H. Baruh", by Kurt Anderson, *Applied Mechanics Reviews*, Vol. 53, No.8, pp B76-B77, August 2000

"Book Review on *Dynamics of Evolutionary Equations*, by G.R.. Sell and Y. You", by Kurt Anderson, *Applied Mechanics Reviews*, Vol55, No.5, pp B84-B85, September 2002

"Book Review on *Dynamics of Mechanical System*, by H. Josephs and R. Huston", by Kurt Anderson, *Applied Mechanics Reviews*, Vol 56, No. 2 pp.B22 March 2003.

"Book Review on *A Modern Approach to Classical Mechanics*, by H Iro", by Kurt Anderson, *Applied Mechanics Reviews*, Vol 56, No. 6, pp.B80-B81, November, 2003.

"Book Review on *Dynamics Formulas*, by Ronald Huston", by Kurt Anderson, AIAA Journal of Applied Mechanics, Vol. 27, No. 4, pp 733, 2004

"Review, Robotic Dynamics Algorithms, Ed. 2, by Roy Featherstone, for Cambridge University Press, July 2004

Book proposal review, "Planar Multibody Dynamics: Formulations, Programming and Application", by Parviz Nikravesh, CRC Press, June, 2006

Book proposal review, "Vibrations of Continuous Mechanical Systems"', by Peter Hagedorn, John Wiley & Sons, Ltd, November, 2006

Invited Lectures:

1. "Efficient Dynamic Modeling of General Multi-Rigid-Body Systems," California Institute of Technology, Pasadena, CA, January 1991.

2. "Efficient Dynamic Modeling of General Multi-Rigid-Body Systems," Draper Laboratories, Cambridge, MA, February 1991.

3. "Efficient Dynamic Modeling of General Multi-Rigid-Body Systems," Center for Robotics Research, Carnegie Mellon University, Pittsburgh, PA, March 1991.

4. "Efficient Dynamic Modeling of General Multi-Flexible-Body Systems," Massachusetts Institute of Technology, Cambridge MA, April 1991.

5. "Efficient Dynamic Modeling of Multi-Flexible-Body Systems," Institut für Mechanik, Technische Hochschule - Darmstadt, Darmstadt, Germany, November 1991.

6. "Efficient Dynamic Modeling of General Multibody Systems," Center for Computer Modeling, University of Marie and Pierre Curie, Paris, France, January 1992.

7. "Efficient Modeling of Multi-Flexible-Body Systems," University of Alabama, Huntsville, AL, May 1992.

8. "On the Control of Orbital Drift or Geostationary Tethered Satellites," TRW Space and Technology Group, Redondo Beach, CA, August 1992.

9. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," DLR, Wessling Germany, January 1993.

10. "Estimation of Gravity Assisted Satellite Trajectory Using the Method of Multiple Scales," Mathematics Institute, Oberwolfach, Germany, February 1993.

11. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," Institut für Mechanik B, Technische Universität München, Germany, March 1993.

12. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," The Ohio State University, Columbus Ohio, April 1993.

13. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," University of Iowa, Iowa City, April 1993.

14. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," University of California, Berkeley, April 1993.

15. "Efficient Modeling of Constrained Multibody Systems with Flexible Components," Ford Motor Company, Dearborn, MI, April 1993.

16. “Efficient Modeling of Constrained Multibody Systems with Flexible Components,” University of Michigan, Ann Arbor, April 1993.

17. “Efficient Modeling of Constrained Multibody Systems with Flexible Components,” Universität -GH -Duisburg, Germany, September 1993.

18. “Efficient Modeling of Constrained Multibody Systems with Flexible Components,” Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw Poland, October 1993.

19. “On the Energy Dissipation in Spacer-Dampers in Bundled Conductors of Overhead Transmission Lines,” Universität Paderborn, Germany, October 1993.

20. “Efficient Modeling of Constrained Multibody Systems with Flexible Components,” Tehcnical Universität - Karlsruhe, Germany, November 1993.

21. “Formulation of Equations of Motion of General Multibody Systems for Time Optimal Simulation Using Parallel Computing,” Rensselaer Polytechnic Institute, May 1994.

22. “Efficient Modeling of Complex Multibody Dynamic Systems Using Hybrid State Space/Full Descriptor Formulation,” The Ohio State University Department of Biomedical Engineering, February 1995.

23. “Highly Parallelizable Low Order Method for the modeling of Complex Multi-Rigid-Body Systems,” Institut für Mechanik, Technische Hochschule - Darmstadt, Darmstadt Germany, June 1996.

24. “Advances in Efficient Modeling of Complex Multibody Systems”, Invited speaker, *Mechanical Dynamics Inc.,* Ann Arbor MI Sep 5, 2000.

25. “Need for Kinetic Measures in Predicting Response of Large-Scale Musculoskeletal Systems Using Optimal Control”, Invited speaker, *NSF/NIOSH Workshop: Next Generation Human-Assisted Devices and Automation*, Baltimore MD, Sep 14, 2000.

26. “Efficient Parallelizable Algorithms for Motion Simulation, Control, and Design,” University of Iowa, April 6, 2001

27. “An O(n+m) Algorithm for the Simulation of Complex Heavily Constrained Multibody Dynamic Systems,” Technical University – Darmstadt, Darmstadt Germany, April 20, 2001

28. “A Parallel Recursive-Coordinate-Reduction Algorithm for the Simulation Of General Multibody Dynamic Systems,” Department of Aerospace and Ocean Engineering, Virginia Polytechnic Institute, March 17, 2003.

29. "Highly Parallelizable *State-Time* Formulation for the Simulation of Multibody Dynamics Systems" Department of Mechanical Engineering, University of Illinois, Chicago , March 5, 2004.

30. Workshop on "Didactics of Mechanics", Mathematics Institute- Oberwolfach, Oberwolfach Germany. January 22-25, 2004.

31. "Massively Parallelizable *State-Time* Formulation for the Simulation of Multibody Dynamics Systems" Department of Mechanical Engineering, Virginia Polytechnic Institute, VA, Febrary 8, 2005

32. "Parallelizable Multiscale *State-Time* Formulation for the Simulation of Multibody Dynamics Systems" Department of Mechanical Engineering, Oregon State University, OR, April 22, 2005.

33. "A Flexible Body Divide and Conquer Algorithm for Multi-Resolution Molecular Dynamics Modeling" Department of Mechanical Engineering, University of Florida, Gainsville, FL, October 27, 2005.

34. "A Flexible Body Divide and Conquer Algorithm for Multi-Resolution Molecular Dynamics Modeling" Department of Mechanical Engineering, Purdue University, West Lafayette, IN, November 17, 2005.

35. "40 Years of Contribution to Mechanics: A Tribute to Peter Hagedorn" , One of four talks given at a special colloquia celebrating the 65th birthday of Professor Peter Hagedorn, Technical University of Darmstadt, Darmstadt Germany, May 19, 2006.

36. "A Framework for Multi-Scale Molecular Dynamics Modeling" Department of Technical Mechanics, Fachhochschule Karlsruhe, Karlsruhe, Germany, May 22, 2006.

37. "A Flexible Divide and Conquer Algorithm for Multi-Scale Molecular Dynamics Modeling" Lehrstuhl Mechanik, Fachbereich Ingenieurwissenschaften, Universität Duisburg-Essen, Duisberg, Germany, May 24, 2006.

38. "New Frontiers in Dynamic Systems", Inter-Agency Modeling and Analysis Group (IMAG) / Multiscale Modeling Consortium (MSM), NIH, Bethesda, MD, April 12, 2007.

39. "A Robust Framework for the Multiscale Modeling and Simulation of Biopolymers", Invited Presentation at Indo-US Workshop on *Spatial Kinematics and Biomolecular Conformation,* Indian Institute of Science, Bangalore India, December 11, 2007

40. "Adaptive Flexible Body Divide and Conquer Algorithm for the Efficient Modeling of Biopolymeric Systems", ETH Zurich, Zurich, Switzerland, June 27, 2008.

41. “Application of the Fourier Integral to Engineering Systems”, Darmstadt Technical University Mathematics Workshop, Hirshegg, Austria, June 30, 2008.

42. “Adaptive Flexible Body Divide and Conquer Algorithm for the Efficient Modeling of Complex Systems” Applied Mechanics Group, TU Darmstadt, July 3, 2008.

43. “Dynamics for Simulation, Loads Determination, Control, Design Optimization, and the Understanding of Complex Molecular Behavior”, College of Engineering Pune, Pune, India, October 11, 2008.

44. “Adaptive Framework for the Efficient Modeling of Complex Molecular Systems”, Department of Mechanical Engineering, University of Wisconsin, Madison, WI, November 18, 2008

45. “On Adaptivity in the Coarse Graining of Large Scale Molecular Dynamics Models”, Department of Mechanical Engineering, University of Connecticut, October 2, 2009.

46. "On Adaptive Multiscale Modeling of Biomolecular Systems With the Application in RNA", University of Maryland, Baltimore, April 9, 2010.

47. "Efficient Forcing Term Determination in the adaptive Modeling of Biomolecular", University of Texas, Arlington, September 9, 2011.

48. “Adaptive Multiscale Modeling of Biomolecular Systems", Indo-U.S. Workshop on Multibody Dynamics, Delhi, India December, 2011.