

JEFFREY L. STEIN

4837 Starak Lane
Ann Arbor, Michigan 48105
(734) 663-6125

Email:stein@umich.edu

<http://www-personal.engin.umich.edu/~stein/>

Dept. Of Mechanical Engineering
The University of Michigan
2292 G.G. Brown Laboratory
Ann Arbor, Michigan 48109-2125
(734) 936-3336, (734) 647-3170 Fax

EDUCATION: **Massachusetts Institute of Technology, Cambridge, MA**

Ph.D. Mechanical Engineering, 1983

S.M. Mechanical Engineering, 1976

S.B. Mechanical Engineering, 1976

University of Massachusetts, Amherst, MA

B.S. Premedical Studies with a minor in Psychology, 1973

RESEARCH AND PROFESSIONAL EXPERIENCE:

1996- University of Michigan, Ann Arbor, MI

Professor, Dept. of Mechanical Engineering (name changed 7/00).

Associate Director of the Automotive Research Center (ARC)
Leader of the ARC's Dynamics and Controls of Vehicle and Mobile Robotics Thrust Area

Research and teaching in system dynamics and control, automated modeling, vehicle modeling and simulation for design, vehicle dynamics and control, machine design and control, machine monitoring, and high speed precision spindles,

1988-1996 University of Michigan, Ann Arbor, MI

Associate Professor, Dept. of Mech. Engr. and Applied Mech.
Research and teaching in system dynamics, control, machine diagnostics, machine design and control, computer-assisted modeling and design and control of artificial limbs.

1983-88 University of Michigan, Ann Arbor, MI

Assistant Professor, Dept. of Mech. Engr. and Applied Mech.

1991- Independent Consultant, Ann Arbor, MI

& 1983-1987 Design analysis of mechanical systems and manufacturing machines.

1988-1991 Failure Analysis Associates, San Francisco, CA

Consultant

Design analysis of mechanical systems and manufacturing machines.

SPECIALIZED PROFESSIONAL COMPETENCE:

Automated Modeling of Dynamic Systems; Proper modeling. Modeling, analysis, design and control of mechanical systems.

Modeling and design of automatic control systems;
electromechanical, hydraulic and pneumatic servosystems.
Vehicle (automobiles and trucks) handling, ride, mobility.
Vehicle suspension and drivetrain design, modeling, control
and simulation. Hybrid vehicles.
Design and control of machine tool systems; machine tool drive
systems and machine tool diagnostics; sensors, signal
processing, model based diagnostics techniques; gear
backlash dynamics, slide friction characteristics, high speed
spindle bearing design, machine guarding.
Biomechanics and modeling of human locomotion. Design and
control of prosthetic devices.

AWARDS, HONORS and MEMBERSHIP:

Area Editor of Area Editor of *Simulation: Transactions of The
Society for Modeling and Simulation International*, (2007-9).
ASME – Fellow, named by the Board of Governors of ASME,
September, 2005
Outstanding Teacher, Department of Mechanical Engineering
Teacher Incentive Program, 1999-2000.
Invited manuscript in the Special 50th Anniversary Issue of the
Journal of Dynamic Systems Measurement and Control, 1993
Named one of the “125 Alumni to Watch” by the University of
Massachusetts, Amherst, 1988.
Presidential Young Investigator Award, National Science
Foundation, 1987
Research Incentive Award, Exxon Foundation Faculty
Assistance Program, 1984
Chair, Executive Committee, Dynamics Systems and Control
Division of American Society of Mechanical Engineers
(ASME), 2001- 2002
Past Associate Editor of the *ASME Journal of Dynamic Systems
Measurement and Control* (1991- 1996)
Member of the National Society of Professional Engineers,
ASME, Past Chairman of the Modeling and Identification;
Biomechanical Systems; and Manufacturing Systems
Technical Panels of the Dynamic Systems and Control
Division of ASME, Society of Manufacturing Engineers,
Society of Automotive Engineers, American Society of
Engineering Educators, The Society for Computer Simulation
and honorary societies; Phi Beta Kappa, Pi Tau Sigma, Phi
Kappa Phi and Sigma Xi.

PROFESSIONAL:

1990 - Registered Professional Engineer, #36154, State of Michigan

REFERENCES:

Available upon request

PUBLICATIONS:

Accepted/Published

- 1) Stein, J. L. and Hedrick, J. K., 1980 "Influence of Fifth Wheel Location on Truck Ride Quality", *Transportation Research Record_774*, pp. 31-39, National Academy of Sciences.
- 2) Stein, J. L. and Flowers, W. C., 1987 "Stance Phase Control of Above-Knee Prostheses: Knee Control Versus SACH Foot Design," *Journal of Biomechanics*, Vol. 20, No. 1, pp. 19-28. (Also appeared in the Proceedings of the 1987 ASME Biomechanics Symposium).
- 3) Stein, J. L., Colvin, D., Clever, G. and Wang, C.-H., 1986 "Evaluation of DC Servo Machine Tool Feed Drives As Force Sensors" *Journal of Dynamic Systems Measurement and Control*, Vol.108, No. 4., pp. 279-288, Dec. (Also appeared in the 1984 *Proceeding of the Symposium on Sensors and Controls for Automated Manufacturing and Robotics*, ASME Winter Annual Meeting).
- 4) Stein, J. L., and Shin K.-C., 1986 "Current Monitoring on Field Controlled DC Spindle Drives", *Journal of Dynamic Systems Measurement and Control*, Vol. 108, No. 4, pp. 289-295, Dec. (Also appeared in the Proceeding of the 1985 Symposium on *Sensors and Controls for Manufacturing*, ASME Winter Annual Meeting).
- 5) Stein, J.L. and Park, Y., 1988 "Measurement Signal Selection and a Simultaneous State and Input Observer", *Journal of Dynamic Systems Measurement and Control*. Vol. 110, No. 2, June. (Also appeared in the *Proceedings of the 1987 American Control Conference*).
- 6) Stein, J. L., Flowers, W. C. and Yigit, A., 1987 "Modeling Prosthetic Gait", *Journal of Biomechanics*, (accepted for publication). (Also appeared in the *Proceedings of the 1987 ASME Biomechanics Symposium*).
- 7) Park, Y.P., Wen, X. and Stein, J.L., "Optimal, State and Input Observer for discrete Time-Variant Systems", *Journal of Dynamic Systems Measurement and Control* (accepted as a technical brief, final version in preparation). (Also appeared in the proceedings of the 1989 ASME WAM).
- 8) Stein, J.L., and Park, Y., 1988 "Closed Loop Simultaneous Input and State Observer", *International Journal of Control*, Vol. 48, No. 3, pp. 1121-36. (Also appeared in the Symposium on *Sensors For Manufacturing*, 1987 ASME Winter Annual Meeting.)
- 9) Stein, J.L. and Park, Y. "Modeling and Sensing Issues for Machine Diagnostics", *IEEE Control Systems* (accepted, final version in preparation). (also appeared in the 1988 *Proceedings of the American Control Conference*).

- 10) Stein, J.L. and Park, Y., 1989 "Steady-State, Optimal State and Input Observer for Discrete Stochastic Systems", *Journal of Dynamic Systems Measurement and Control* Vol. 111, pp. 121-127, June. (Also appeared as "Steady-State, Optimal State and Input Observer" in the Symposium on *Expert Systems and Intelligent Control*, 1987 ASME Winter Annual Meeting).
- 11) Stein, J. L., Wang, C.-H., 1990 "Analysis of Power Monitoring on AC Induction Drive Systems", *Journal of Dynamic Systems, Measurement and Control*, Vol. 112, No. 2, pp. 239--248, June. (Also appeared in the Proceeding of the 1986 Symposium on *Sensors and Controls for Manufacturing*, ASME-WAM).
- 12) Stein, J.L. 1993 "Modeling And State Estimator Design Issues for Model-Based Monitoring Systems" Special 50th Anniversary Issue of the *Journal of Dynamic Systems Measurement and Control*, Vol.115, No. 2(B) June. (This paper was solicited by the editorial board of the 50th Anniversary Issue and reviewed anonymously.)
- 13) Stein, J.L. and Tu, J.F. 1994 "A State Space Model for Monitoring Thermally-Induced Preload in Anti-Friction Spindle Bearings of High Speed Machine Tools" *Journal of Dynamic Systems Measurement and Control*, Vol. 11, No. 3, September, pp. 372-386. (Also appeared in the 1991 ASME WAM, Symposium on *Control of Manufacturing processes*.)
- 14) Huh, K. and Stein J.L. 1994 "A Quantitative Performance Index for Observer-Based Monitoring Systems" *Journal of Dynamic Systems Measurement and Control*, Vol. 11, No. 3, September, pp. 487-497. (Also appeared in the *Proceedings of the 1993 American Control Conference on Automatic Control*.)
- 15) Tu, J.F. and Stein, J.L. 1995 "On-line Preload Monitoring for Anti-Friction Spindle Bearings of High-Speed Machine Tools" *Journal of Dynamic Systems Measurement and Control* Vol. 117, No. 1, March, pp. 43-53. (Also appeared in the *Proceedings of the 1992 American Control Conference*. Awarded Best Paper of the Technical Session)
- 16) Huh, K. and Stein J.L. 1995 "Well-Conditioned Observer Design for Observer-Based Monitoring Systems" *Journal of Dynamic Systems Measurement and Control* Vol 117, No. 4, December, pp. 592-599. (Also appeared in the *Proceedings of the 1993 American Control Conference on Automatic Control* , Nominated for O. Hugo Schuck, Best Paper of Conference.)
- 17) Stein J.L and Wilson, B.H. 1995 "An Algorithm for Obtaining Proper Models of Distributed and Discrete Systems" *Journal of Dynamic Systems Measurement and Control* Vol 117, No. 4, December, pp. 534-540. (An earlier version also appeared in the proceedings of the 1992 ASME WAM Symposium on *Automated Modeling*)
- 18) Tu, J.F. and Stein, J.L. 1996 "Active Thermal Preload Regulation for Machine Tool Spindles with Rolling Element Bearings" ASME Transactions: *Journal of Manufacturing Science and Engineering*. Vol. 118, No. 4, pp. 499-505, November. (An earlier version also appeared in the proceedings of the 1994 ASME WAM Symposium on *Mechatronics in Manufacturing*, Chicago, IL.)

- 19) Stein, J.L. and Wang, C.W. 1996 "Automatic Detection of Clearance in Mechanical Systems: Experimental Validation", *Journal of Mechanical Systems and Signal Processing*. Vol. 10, No. 4, pp. 395-412, July. (Also appeared as Stein, J.L. and Wang, C.W., 1990 "Automatic Detection of Clearance in Mechanical Systems: Experimental Validation" Proceedings of the USA/Japan Symposium on Flexible Automation, July, Kyoto, Japan.)
- 20) Tu, J.F. and Stein, J.L. 1996 "Model Error Compensation for Bearing Temperature and Preload Estimation" ASME Transactions: *Journal of Dynamic Systems Measurement and Control* , Vol. 118, No. 3, pp. 580-585, Sept.
- 21) Ohl, G., Stein, J.L. and Smith E. 1996 "Fundamental Factors in the Design of a Fast Responding Methanol to Hydrogen Steam Reformer for Transportation Applications" Transactions of the ASME: *Journal of Energy Resources Technology*, Vol. 118, No. 2, June.
- 22) Stein, J.L. and L.S. Louca, 1996. "A Template-Based Modeling Approach for System Design: Theory and Implementation". *Transactions of the Society for Computer Simulation International*, Vol. 13, No. 2, pp.87-101. Published by the Society for Computer Simulation, ISSN 0740-6797, San Diego, CA. (Also appeared as Stein, J.L. and Louca, L.S. 1995 "A Component-Based Modeling Approach for System Design: Theory and Implementation" Proceedings of the 1995 International Conference on Bond Graph Modeling, pp. 109-115, Las Vegas, NV.)
- 23) Huh, K. and Stein J.L. 1997 "A Non-Normality Measure of The Condition Number For Monitoring And Control" *Journal of Dynamic Systems Measurement and Control* , Vol 119, No. 2, pp 217-222, June,
- 24) Stein, J.L., and Wang C.W. 1998 "Estimation of Gear Backlash: Theory And Simulation", *Journal of Dynamic Systems Measurement and Control.*, Vol 120, No. 1, pp. 74-82. (Revised version of Stein, J.L., and Wang C.W., "Automatic Detection Of Clearance In Mechanical Systems: Theory And Simulation", *Proceedings of the 1995 American Control Conference on Automatic Control* , Seattle, WA.)
- 25) Tu, J.F. and Stein, J.L., 1998, "Model Error Compensation for Observer Design" *International Journal of Control*, Vol. 69, No. 2, pp. 329 - 345.
- 26) Ferris, J., Stein, J.L. and Bernitsas, M. 1998 "Development Of Proper Models of Hybrid Systems" *Journal of Dynamic Systems Measurement and Control*, Vol. 120, No. 3, pp. 328 - 333. (Also appeared as Ferris, J., Stein, J.L. and Bernitsas, M. 1994 "Development Of Proper Models of Hybrid Systems" 1994 ASME WAM Symposium on Automated Modeling, Chicago, IL.)
- 27) Ferris, J. B., M. M. Bernitsas and J. L. Stein, 2000, "Redesigning the Dynamics of Complex Structural Systems," *AIAA Journal*, Vol. 38, No. 1, pp. 147-154.

- 28) Walker, D.G., Stein, J.L. and Ulsoy A.G. 2000 “An input-Output Criterion for Linear Model Deduction” *Journal of Dynamic Systems Measurement and Control*, Vol 122, No. 3, pp. 507-513. (Also appeared as Walker, D.G., Stein, J.L. and Ulsoy A.G. 1996 “An input-Output Criterion for Linear Model Deduction” Proceedings of the Dynamic Systems and Control Division, 1996 ASME IMECE, Atlanta, GA.).
- 29) Assanis, D.N., Z.S. Filipi, S. Gravante, D. Grohnke, X. Gui, L.S. Louca, G.D. Rideout, J.L. Stein, Y. Wang, 2000. “Validation and Use of SIMULINK Integrated, High Fidelity, Engine-In-Vehicle Simulation of the International Class VI Truck”. *2000 SAE Transactions – Journal of Engines*. Published by the Society of Automotive Engineers, ISBN 0-7680-0842-5, Warrendale, PA. Also presented at the *SAE 2000 World Congress*, Paper 2000-01-0288.
- 30) Michelena, N.F., L.S. Louca, M. Kokkolaras, Chan-Chiao Lin, Dohoy Jung, Z.S. Filipi, D.N. Assanis, P.Y. Papalambros, H. Peng and J.L. Stein, 2001. “Design of an Advanced Heavy Tactical Truck: A Target Cascading Case Study”. *2001 SAE Transactions – Journal of Commercial Vehicles*. Published by the Society of Automotive Engineers, Warrendale, PA. Also presented at the *2001 SAE International Truck and Bus Meeting and Exposition*, Paper 2001-01-2793.
- 31) Huh, K., Jung, J. and Stein J.L., 2001 “Discrete-time Well-conditioned State Observer Design and Evaluation” *ASME Transactions: Journal of Dynamic Systems Measurement and Control* Special Issue on the Identification of Mechanical Systems, Vol 123, Dec., pp. 615-622.
- 32) Stein, J.L. and Huh, K. 2002 “Monitoring Cutting Forces In Turning: A Model-Based Approach” *ASME Transactions: Journal of Manufacturing Science and Engineering*, Vol. 124, Feb., pp. 26-31.(Revised version of Stein, J.L. and Huh, K., 1991 “A Design Procedure for Model-Based Monitoring Systems: Cutting Force Estimation as a Case Study” 1991 ASME WAM, Symposium on Control of Manufacturing processes, Dec., Atlanta, GA.)
- 33) Louca, L.S. and J.L. Stein, 2002. “Ideal Physical Element Representation from Reduced Bond Graphs”. *Journal of Systems and Control Engineering: Special Issue on Bond Graphs*, Vol. 216, No. 1, pp. 73-83. Published by the Professional Engineering Publishing, ISSN 0959-6518, Suffolk, United Kingdom.
- 34) Kim, H.M. Kokkolaras, M., Louca, L.S., Delagrammatikas, G.J. Michelena, N.F., Filipi, Z.S., Papalambros, P.Y., Stein, J.L. and Assanis, D.N. 2002 “Target Cascading in Vehicle redesign: a Class VI Truck Study” *International Journal of Vehicle Design*, Vol 29, No. 3. Published by Interscience Enterprises Ltd., ISSN 0143-3369, St. Helier, United Kingdom
- 35) Kim, H.M., Rideout, D.G., Papalambros, P.Y., Stein, J.L. (2003) "Analytical Target Cascading in Automotive Vehicle Design." *Journal of Mechanical Design*, Vol 125 / 1, September, American Society of Mechanical Engineers, New York, NY.

- 36) Filipi, Z.S., L.S. Louca, B. Daran, Chan-Chiao Lin, U. Yildir, B. Wu, M. Kokkolaras, D.N. Assanis, H. Peng, P.Y. Papalambros, and J.L. Stein, 2003. "Combined Optimization of Design and Power Management of the Hydraulic Hybrid Propulsion System for the 6x6 Medium Truck". *Special Issue on Advanced Vehicle Design and Simulation of the International Journal of Heavy Vehicle Systems*, Vol. 11, No.3/4 pp. 372 - 402. Published by Inderscience Enterprises Ltd., ISSN 1744232X, St. Helier, United Kingdom.
- 37) Louca, L.S., D.G. Rideout, J.L. Stein, and G.M. Hulbert, 2003. "Generating Proper Dynamic Models for Truck Mobility and Handling". *Special Issue on Advanced Vehicle Design and Simulation of the International Journal of Heavy Vehicle Systems*, Vol. 11, No.3/4 pp. 209 - 236. Published by Inderscience Enterprises Ltd., ISSN 1744232X, St. Helier, United Kingdom.
- 38) Lin, Chan-Chiao, Z. Filipi, L.S. Louca, H. Peng, D.N. Assanis and J.L. Stein, 2003. "Modeling and Control for a Medium-Duty Hybrid Electric Truck". *Special Issue on Advanced Vehicle Design and Simulation of the International Journal of Heavy Vehicle Systems*, Vol. 11, No.3/4 pp. 349 - 371. Published by Inderscience Enterprises Ltd., ISSN 1744232X, St. Helier, United Kingdom.
- 39) Kokkolaras, M., L.S. Louca, G.J. Delagrammatikas, N.F. Michelena, Z.S. Filipi, P.Y. Papalambros, J.L. Stein, and D.N. Assanis, 2003. "Simulation-Based Optimal Design of Heavy Trucks by Model-Based Decomposition: An Extensive Analytical Target Cascading Case Study". *Special Issue on Advanced Vehicle Design and Simulation of the International Journal of Heavy Vehicle Systems*, Vol. 11, No.3/4 pp. 403 - 433. Published by Inderscience Enterprises Ltd., ISSN 1744232X, St. Helier, United Kingdom.
- 40) Ohl, G., Stein, J.L. and Smith, E. (2004) "A Dynamic Model for the Design of Methanol to Hydrogen Steam Reformers for Transportation Applications" ASME Transaction: Journal of Energy Resources Technology, Vol. 126 No. 2, June.
- 41) Rideout, D.G., Stein, J.L. and Louca, L.S. (2006) "A Systematic Identification of Decoupling in Dynamic System Models", ASME Transaction: *Journal of Dynamic Systems, Measurement and Control* (in press).
- 42) Filipi, Z., Fathy, H., Hagen, J., Knafl, A., Ahlawat, R., Liu, J., Jung, D., Assanis, D.N., Peng, H., and J. Stein, (2007) "Engine-in-the-Loop Testing for Evaluating Hybrid Propulsion Concepts and Transient Emissions: A HMMWV Case Study" SAE Transactions, *Journal of Commercial Vehicles*. Paper No. 2006-01-0443, March. (Also published as SAE Paper 2006-01-0443, SP-2008, 2006 SAE Congress, Detroit, MI, April 3-6, 2006.)
- 43) Jongchul Jung, Kunsoo Huh, Hosam K Fathy, and Jeffrey L. Stein, "Optimal adaptive observer design for nonlinear systems with bounded disturbances" *Automatica* (in review). (As published as "Optimal Robust Adaptive Observer Design for a Class of Nonlinear Systems via an H-infinity Approach", Proceedings of the 2006 American Control Conference, Minneapolis, Minnesota, June 14-16

- 44) Ersal, T., Fathy, H. and Stein, J.L. "Structural simplification of modular bond-graph models based on junction inactivity" International Journal of the Federation of European Simulation Societies: *Simulation Modelling Practice and Theory*, Published by Elsevier (in review).
- 45) Rideout, D.G., Stein, J.L., and Louca, L.S. (2006) "Systematic Assessment of Rigid Internal Combustion Engine Dynamic Coupling" ASME Transactions: *J. Eng. for Gas Turbines and Power* ASME, New York, NY (in review).
- 46) Hoffman, R.C., Stein, J.L., Loucas L.S., and Kunssoo, H. "Using the Milliken Moment Method and Dynamic Simulation to Evaluate Vehicle Stability and Controllability" *International Journal of Vehicle Design*, Inderscience Publishers (in review).

Referenced Proceedings:

Papers published at ASME conferences and ACC conferences that subsequently appeared as archival papers are not listed below.

Contributed Refereed Papers

- 1) Stein, J. L., Veranth, J. M., Senapati, N., and Lele, P. P., 1975 "The Roles of Heat Generation, Cavitation, and other Mechanical Forces in Ultrasonic Tissue Destruction," Proceedings of the Third Annual New England Bioengineering Conference, Tufts, Univ., Medford, MA, May.
- 2) Stein, J. L. and Flowers, W. C., 1980 "Above-Knee Prosthetics: A Case Study of the Interdependency of Effector and Controller Design", 1980 Advances in Bioengineering, Winter Annual Meeting of the ASME, Chicago, pp. 275-278.
- 3) Stein, J.L., and Hu, S. 1987 "Design of Prosthetic Feet: A Finite Element Approach", Proceeding of the Symposium on Biomechanics of Normal and Prosthetic Gait, 1987 ASME Winter Annual Meeting.
- 4) Stein, J.L., and Wang C.W. 1988 "Automated Detection of Backlash in Servo-systems", Symposium on Sensors and Control for Manufacturing, 1988 ASME Winter Annual Meeting.
- 5) Stein, J.L., 1989 "The Art of Physical System Modeling: How Can it be Taught?", Proceedings of the Symposium on Approaches to Teaching Physical System Modeling, ASME Winter Annual Meeting, San Francisco.
- 6) Stein, J.L., Olson, L., Mooradian, M. and Weber, M., 1989 "The Measurement and Role of Prosthetic Foot Damping", Proc., of the XIIth International Congress of Biomechanics, June.
- 7) Stein, J.L. and Wu, W., 1990 "Monitoring Stick-Slip Motion of Machine Tool Slides Using Feed Motor Current", Proceeding of the IEEE International Workshop on Intelligent Motion Control, August, 20-22, Istanbul Turkey.
- 8) Stein, J.L. and Wang, C.W., 1990 "Automatic Detection of Clearance in Mechanical Systems: Experimental Validation" Proceedings of the USA/Japan Symposium on Flexible Automation, July, , Kyoto, Japan.

- 9) Park, Y.P. and Stein, J.L., 1990 "Performance Evaluation of a State and Input Observer for Machine Diagnostics" Proceedings of the 1990 American Control Conference, May 22-25, , San Diego, CA.
- 10) Stein J.L. and Tseng Y-T., 1991 "Strategies for Automating the Modeling Process" 1991 ASME WAM Symposium on Automated Modeling, Dec. , Atlanta, GA.
- 11) Stein, J.L. and Huh, K., 1991 "A Design Procedure for Model-Based Monitoring Systems: Cutting Force Estimation as a Case Study" 1991 ASME WAM, Symposium on Control of Manufacturing processes, Dec. , Atlanta, GA.
- 12) Tu, J.F. and Stein, J.L. 1993 "Strain Wave Estimation and Sensing for Monitoring Machine Tool Spindle Dynamics" 1993 ASME WAM Symposium on Modeling and Control of Manufacturing Processes, December, New Orleans, LA.
- 13) Wilson, B.H. and Stein J.L. 1993 "Model Building Assistant: An Automated Modeling Tool for Machine Tool Drive Systems" 1993 Proceedings of the International Conference on Bond Graph Modeling and Simulation, San Diego, CA.
- 14) Ohl, G. Smith, and J.L. Stein 1994 "Dynamic Models of a Methanol to Hydrogen Steam Reformer for Transportation Applications." From 1994 Fuel Cell Seminar; San Diego, CA (United States); 28 Nov - 1 Dec 1994. In Fuel Cell Seminar, 1994: Program and Abstracts.
- 15) Ferris, J., Stein, J.L. and Bernitsas, M. 1994 "Development Of Proper Models of Hybrid Systems" 1994 ASME WAM Symposium on Automated Modeling, Chicago, IL..
- 16) Huh, K. and Stein J.L. 1994 "Minimization Of The Condition Number For Monitoring And Control", 1994 ASME WAM Symposium on Mechatronics in Manufacturing, Chicago, IL.
- 17) Tu, J.F. and Stein, J.L. 1994 "Model Error Compensation and Robust Observer Design Part I: Theoretical Formulation and Analysis" Proceedings of the 1994 American Control Conference on Automatic Control , Baltimore, MD.
- 18) Tu, J.F. and Stein, J.L. 1994 "Model Error Compensation and Robust Observer Design Part II: Bearing Temperature and Preload Estimation" Proceedings of the 1994 American Control Conference on Automatic Control , Baltimore, MD.
- 19) Ferris, J.B. and Stein J.L. 1994 "Development Of Proper System Models For Hybrid Systems: A Bond Graph Approach" Proceedings of the 1994 IMACS World Congress, Atlanta, GA (extended Abstract).
- 20) Stein, J.L. and Louca, L.S. 1995 "A Component-Based Modeling Approach for System Design: Theory and Implementation" Proceedings of the 1995 International Conference on Bond Graph Modeling, pp. 109-115, Las Vegas, NV, Published by SCS, ISBN 1-56555-037-4, San Diego, CA.
- 21) Ferris J.B., and Stein, J.L. 1995 "Development Of Proper Models Of Hybrid Systems: A Bond Graph Formulation" Proceedings of the 1995 International Conference on Bond Graph Modeling, pp. 43-48, Las Vegas, NV.

- 22) Stein, J.L., and Wang C.W., 1995 "Automatic Detection Of Clearance In Mechanical Systems: Theory And Simulation", Proceedings of the 1995 American Control Conference on Automatic Control , Seattle, WA.
- 23) Walker, D.G., Sttein, J.L. and Ulsoy A.G. 1996 "An input-Output Criterion for Linear Model Deduction" Proceedings of the Dynamic Systems and Control Division, 1996 ASME IMECE, Atlanta, GA.
- 24) Ervin, R.D., Stein, J.L.. 1996 Zachariou, N., Bogard, S.E. and Kleinsorge K. "Predicting Probability of Encroachment Conflicts Posed by Adaptive Cruise Control" Proceedings of the Dynamic Systems and Control Division, 1996 ASME IMECE, Atlanta, GA
- 25) Gibson, A.O. and Stein, J.L. 1996 "Spindle Preload Monitoring" Proceedings of the Dynamic Systems and Control Division, 1996 ASME IMECE, Atlanta, GA
- 26) Huh, K., Kwak, B. and Stein J.L., 1996 "Discrete-time Well-conditioned State Observer Design and Evaluation" Proceedings of the Dynamic Systems and Control Division, 1996 ASME IMECE, Atlanta, GA
- 27) Loucas, L., Stein J.L., Hulbert, G. and Sprague, J. 1997 "Proper Model Generation: An Energy-Based Methodology" Proceedings of the 1997 International Conference on Bond Graph Modeling and Simulation, Phoenix, Arizona, January 12 -15, 1997, published by the Society for Computer Simulation International, Simulation Series Vol. 29, No. 1, ISBN 1-56555-103-6, San Diego, CA.
- 28) Gibson, A. O., Stein, J. L., Tu, J. F., 1997, " A Thermomechanical Model of Machine Tool Spindles for use in the Design of Reconfigurable Angular Contact Spindle Bearing Load Control Systems," ASME Proc., Man. Sci. and Eng. Div., MED-vol. 6-1, pp. 23-30, 1997 ASME IMECE, Atlanta, GA.
- 29) Louca, L.S. and J.L. Stein, 1998. "Physical Interpretation of Reduced Bond Graphs". Proceedings of the 2nd IMACS International Multiconference: Computational Engineering in Systems Applications (CESA'98). Hammamet, Tunisia.
- 30) Louca, L.S., J.L. Stein and G.M. Hulbert, 1998. "A Physical-Based Model Reduction Metric with an Application to Vehicle Dynamics". The 4th IFAC Nonlinear Control Systems Design Symposium (NOLCOS 98). Enschede, The Netherlands.
- 31) Gibson, A. O., Stein, J. L., 1998, " A Finite Element Model of Thermally Induced Angular Contact Spindle Bearing Loads," ASME Proc., Man. Sci. and Eng. Div., 1998 ASME IMECE, Anaheim, CA.
- 32) Louca, L.S. and Stein, J.L., 1999. "Energy-Based Model Reduction of Linear Systems". Proceedings of the 1999 International Conference on Bond Graph Modeling. January, San Francisco CA. Published by SCS, San Diego, CA.

- 33) Assanis, D., Bryzik, W., Chalhoub, N. Filipi, Z., Henein, N., Jung, D. Xiaoliu, L. Louca, L., Moskaw, J., Munns, S., Overholt, J., Papalambros., P., Riley, S. Zachary, R., Sendur, P., Stein, J.L., Zhang, G. 1999 "Integration and Use of Diesel Engine Driveline and Vehicle Dynamics Models for Heavy Duty Truck Simulation" SAE Paper 199-01-0970, 1999 SAE Congress, Detroit, MI.
- 34) Gibson, A. O., Stein, J. L., 1999, "Reduced Order Finite Element Modeling of Thermally Induced Bearing Loads in Machine Tool Spindles," Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Nashville, TN.
- 35) Assanis, D.N., Z.S. Filipi, S. Gravante, D. Grohnke, X. Gui, L.S. Louca, G.D. Rideout, J.L. Stein, Y. Wang, 2000. Validation and Use of SIMULINK Integrated, High Fidelity, Engine-In-Vehicle Simulation of the International Class VI Truck. SAE Paper 2000-01-0288, SAE 2000 World Congress.
- 36) Christensen, B. G., Ferris, J.B., Stein J.L., 2000 "An Energy-Enhanced Design Of Experiments Method Applied To Multi-Body Models" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Chicago, IL.
- 37) Christensen, B. G., Ferris, J.B., Stein J.L., 2000 "An Energy-Enhanced Design of Experiments Method" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Chicago, IL.
- 38) Stein, J.L. and Harder J. 2001 "Modeling and Analysis for Thermal Control of Spindles for Reconfigurable Machines" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, New York, NY.
- 39) Hyung, M. K., Rideout, D.G., Papalambros, P. and Stein, J.L. 2001 "Analytical Target Cascading In Automotive Vehicle Design", Proceeding of the DETC 2001, 27th Design Automation Conference, September 9-12, 2001, Pittsburgh, Pennsylvania.
- 40) Rideout, D.G., Stein, J.L., Ferris, J.B., Hogland D.K. 2001 "Target Cascading: A Design Process For Achieving Vehicle Ride And Handling Targets" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, New York, NY.
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