

Revised: September 23, 2007

1.....PUBLICATIONS

1.1.....Refereed Journals:

1.1.1.....In preparation

- 1) Loucas, L., Stein J.L., Hulbert, G. (expect to submit in Dec. 07) "Energy-Based Model Reduction Methodology for Automated Modeling" ASME Transactions: Journal of Dynamic Systems Measurement and Control. Revised version of 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.
- 2) Jongchul Jung, Kunsoo Huh, Hosam K Fathy, and Jeffrey L. Stein, "Optimal adaptive observer design for nonlinear systems with bounded disturbances" TBD (in revision). (Also 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

1.1.2.....Accepted/Published/To appear/In review

- 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. (Also presented as "Analytical Target Cascading in Automotive Vehicle Design." Proceeding of the DETC 2001, 27th Design Automation Conference, September 9-12, 2001, Pittsburgh, Pennsylvania.)
- 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. (2007) "Systematic Identification of Decoupling in Dynamic System Models", *ASME Transaction: Journal of Dynamic Systems, Measurement and Control* Vol. 129, pp. 503-13, July, American Society of Mechanical Engineers, New York, NY.

- 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) Ersal, T., Fathy, H. and Stein, J.L. "Orienting body coordinate frames using Karhunen-Loève expansion for more effective structural simplification" International Journal of the Federation of European Simulation Societies: *Simulation Modelling Practice and Theory*, Published by Elsevier (in review).
- 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 (Revisions, requested by the Assoc. Editor, 5/11/07, revisions submitted 6/18/07 to be reviewed by the Assoc. Editor).
- 46) Hoffman, R.C., Stein, J.L., Loucas L.S., and Kunsoo, H. "Using the Milliken Moment Method and Dynamic Simulation to Evaluate Vehicle Stability and Controllability" *International Journal of Vehicle Design*, Inderscience Publishers (in review).
- 47) Rideout, D.G., Stein, J.L. and Louca, L. "Power-Based Dynamic System Modeling Decoupling and Reduction Using Bond Graphs" " International Journal of the Federation of European Simulation Societies: *Simulation Modelling Practice and Theory*, Published by Elsevier (in re-review).
- 48) Tulga Ersal, Hosam K. Fathy, and Jeffrey L. Stein, 2007, "Realization-Preserving Structure And Order Reduction Of Nonlinear Energetic System Models Using Energy Trajectory Correlations", ASME Transactions: *Journal of Dynamic Systems Measurement and Control* (in review) (also 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, WA, USA, Nov. 10-16.).
- 49)

1.2.....Referenced Proceedings:

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

1.2.1.....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., 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.
- 24) Ervin, R.D., Stein, J.L., 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.
- 41) Louca, L.S., J.L. Stein, and D.G. Rideout, 2001. “Integrated Proper Vehicle Modeling and Simulation Using a Bond Graph Formulation”. Proceedings of the 2001 *International Conference on Bond Graph Modeling*, Vol. 33, No. 1, pp. 339–345, Phoenix, AZ. Published by the Society for Computer Simulation, ISBN 1–56555–221–0, San Diego, CA.
- 42) Harder, J.E. and Stein, J.L. 2002 “A thermal-Based spindle bearing load controller: Preliminary Experimental Evaluation”, Proceedings of the ASME 2002 IMECE Conference, Dynamic Systems and Control Division, Published by ASME, New York, NY.
- 43) Sendur, P., J.L. Stein, L.S. Louca and H. Peng, 2002. “A Model Accuracy and Validation Algorithm”. Proceedings of the 2002 *ASME International Mechanical Engineering Congress and Exposition*, New Orleans, Louisiana. Published by American Society of Mechanical Engineers, ISBN 0-7918-1692-3, New York, NY.
- 44) Sendur, P., J.L. Stein, L.S. Louca and H. Peng, 2003. “An Algorithm for the assessment of reduced dynamic system models for design”. Proceedings of the *International Conference on Simulation and Multimedia in Engineering Education*, pp. 92-101, Orlando, FL. Published by the Society for Modeling and Simulation International Simulation, ISBN 1–56555–261–1, San Diego, CA.
- 45) Sendur, P. Stein J.L., Louca, L. and Peng H. 2003 “An Algorithm for the Selection of Physical System Model Order Based on Desired State Accuracy and Computational Efficiency” Proceedings of the 2003 ASME IMECE Conference, Dynamic Systems and Control Division, NY, NY.
- 46) Rideout, D.G., Stein, J.L., and Louca, L.S. 2004 “System Partitioning and Physical-Domain Model Reduction Through Assessment of Bond Graph Junction Structure” Proceedings of the 1st International Conference on Integrated Modeling and Analysis in Applied Control and Automation (Part of the 1st International Mediterranean Modeling Multiconference), Genoa, Italy

- 47) Ersal, T., Stein, J. L., Louca, L. S., 2004, "A Bond Graph Based Modular Modeling Approach towards an Automated Modeling Environment for Reconfigurable Machine Tools", Proceedings of the 1st International Conference on Integrated Modeling and Analysis in Applied Control and Automation (Part of the 1st International Mediterranean Modeling Multiconference), Genoa, Italy.
- 48) Ersal, T., Stein, J. L., Louca, L. S., 2004, "A Modular Modeling Approach for the Design of Reconfigurable Machine Tools", Proceedings of the ASME IMECE 2004 Conference, Manufacturing Engineering Division, Anaheim, CA.
- 49) Rideout, D.G., Stein, J.L., and Louca, L.S. (2004) "Systematic Model Decoupling Through Assessment of Power-Conserving Constraints - An Engine Dynamics Case Study." ASME Paper IMECE2004-59600, *Proc. ASME IMECE 2004, Dynamic Systems and Controls Division*, Anaheim, CA.
- 50) Sohns, B., Stein, J.L., and Louca, L. 2004 "Determining Model Accuracy As A Function Of Inputs And System Parameters" *Proc. ASME IMECE 2004, Dynamic Systems and Controls Division*, Paper No. IMECE 2004-59733, Anaheim, CA.
- 51) Hoffman, R.C., Stein, J.L., Louca, L.S., Huh, K. 2004 "Using the Milliken Moment Method and Dynamic Simulation to Evaluate Vehicle Stability and Controllability" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, New York, NY.
- 52) Harder III, J.E. and Stein, J.L. 2004 "Controlling Both Thermally Induced Loads in Back-to-Back Angular Contact Spindle Bearings." Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Anaheim, CA.
- 53) Harder III, J.E. and Stein, J.L. 2004 "Measurement of Thermally Induced Loads in Back-to-Back Angular Contact Spindle Bearings Using Strain Gauges." Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Anaheim, CA.
- 54) Jungchul J. Lee T.H., Stein, J.L. and Huh, K. 2004 "Robust Observer Design with Deterministic and Stochastic Uncertainties" Proceedings of the ASME IMECE Conference, Dynamic Systems and Control Division, Anaheim, CA.
- 55) Rideout, D.G., Stein, J.L. and Louca, L. 2005 "System Partitioning and Improved Bond Graph Model Reduction Using Junction Structure Power Flow" Proceedings of the 2005 International Conference on Bond Graph Modeling as part of the Western Simulation Multiconference, New Orleans, LA, Jan. 23-7, pp. 43-50. Published by the Society for Computer Simulation, ISBN 1-56555-287-3, San Diego, CA.
- 56) Sohns, B., Stein, J.L. and Louca, L. 2005 "Vehicle Model Robustness: A Case Study of the FMTV Military Truck Model" SAE Paper No. SAE2005_05MV-18, Proceedings of the SAE 2005 World Congress, April 11-14, Detroit, MI. Published by the SAE International. (in press).
- 57) Kang, D., Hoffman, R.C., Stein, J.L., Louca, L.S. and Huh K. 2005 "Implementing the Milliken Moment Method using Controlled Dynamic Simulation" SAE Paper No. SAE2005-01-0417, Proceedings of the SAE 2005 World Congress, April 11-14, Detroit, MI. Published by the SAE International. (in press).

- 58) Fathy, H. K., and Stein, J. L., 2005, "Fundamental Concordances between Balanced Truncation and Activity-Based Model Reduction", *Proceedings of the International Conference on Integrated Modeling and Analysis in Applied Control and Automation*, pp. 109-116, Marseilles, France, October 20-22, 2005
- 59) Hosam K Fathy, Rahul Ahlawat, and Jeffrey L. Stein, 2005, "Proper Powertrain Modeling for Engine-in-the-Loop Simulation", *Proceedings of the 2005 ASME International Mechanical Engineering Congress and Exposition*, Orlando, Florida, November 5-11, 2005.
- 60) Filipi, Z., Fathy, H. K., Hagen, J., Knafl, A., Ahlawat, R., Liu, J., Jung, D., Assanis, D., Peng, H., and Stein, J. L., 2006, "Engine-in-the-Loop Testing for Evaluating Hybrid Propulsion Concepts and Transient Emissions – HMMWV Case Study", to appear in *Proceedings of the 2006 SAE World Congress*.
- 61) Zoran Filipi, Hosam K Fathy, and Jeffrey L. Stein, 2006, "Integrating High-Fidelity Simulations and Real Hardware for Design and Development of Advanced Powertrains", *Proceedings of the SPIE Conference on Modeling and Simulation for Military Applications*, Kissimmee, Florida, April 17-22.
- 62) Jongchul Jung, Kunsoo Huh, Hosam K Fathy, and Jeffrey L. Stein, 2006, "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.
- 63) T. Ersal, H. K. Fathy, and J. L. Stein, "Structural Simplification of Modular Bond-Graph Models Based on Junction Inactivity," ASME Paper IMECE2006-14567, *Proc. IMECE 2006, Dynamic Systems and Controls Division*, Chicago, IL, 2006.
- 64) T. Ersal, H. K. Fathy, and J. L. Stein, "Orienting Body Reference Frames Using Proper Orthogonal Decomposition for More Effective Structural Simplification," ASME Paper IMECE2006-14572, *Proc. IMECE 2006, Dynamic Systems and Controls Division*, Chicago, IL, 2006.
- 65) Kittirungsi, B., Fathy, H.K., and Stein, J.L. (2006) "An Efficient Scaling Methodology for Dynamic Models Using Dimensional and Activity Analyses." ASME Paper IMECE2006-14587, *Proc. ASME IMECE 2006, Dynamic Systems and Controls Division*, Chicago, IL
- 66) Sohns, B.J., Allison, J., Fathy, H., and Stein, J.L., (2006) "Efficient Parameterization of Large-Scale Dynamic Models Through the use of Activity Analysis." ASME Paper IMECE2006-14599, *Proc. ASME IMECE 2006, Dynamic Systems and Controls Division*, Chicago, IL.
- 67) Yuqing Liu, H.K. Fathy, J.L. Stein (2007) "Optimal Modular Robot Configuration Design Using Genetic Algorithms And Genetic Programming" *Proceedings of the 2007 American Control Conference*, 2007, New York, NY, July 11 – 13. (presentation only)
- 68) Burit Kittirungsi, Hosam K. Fathy, and Jeffrey L. Stein, 2007, "An Approximate Similitude Design Methodology for Dynamic Systems", 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, WA, USA, Nov. 10-16.

- 69) Tulga Ersal, Hosam K. Fathy, and Jeffrey L. Stein, 2007, "Realization-Preserving Structure And Order Reduction Of Nonlinear Energetic System Models Using Energy Trajectory Correlations", 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, WA, USA, Nov. 10-16.
- 70) Tulga Ersal, Hosam K. Fathy, Loucas S. Louca, D. Geoff Rideout, and Jeffrey L. Stein, 2007, "A Review Of Proper Modeling Techniques A Review Of Proper Modeling Techniques", 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, WA, USA, Nov. 10-16.
- 71) Hosam K. Fathy, Dongsoo Kang, and Jeffrey L. Stein, 2008, "Online Vehicle Mass Estimation Using Recursive Least Squares and Supervisory Data Extraction", 2008 American Control Conference, Seattle, WA, (in review).

1.3.....Other:

- 1) Stein, J. L., Hsu, W. L., and Lele, P. P., 1976 "Ultrasonic Intensity-Insonation Duration Thresholds for Morphological Damage to Mammalian C.N.S. in Vivo," Abstract in the *Proceedings of the 91st Annual Meeting of the Acoustical Society of America*, Washington, D.C., April.
- 2) Hedrick, J. K., Wormley, D. N., Coverstone, R., Stein, J. L., and Hurt, T. B. 1977 "The Influence of Fifth Wheel Location and Braking Characteristics on Articulated Vehicle Motion." Final Report prepared for the US. Department of Transportation, National Highway Safety Administration, Contract DOT-HS-6-01343, Washington D.C., November.
- 3) Stein, J. L. and Flowers, W. C., 1981 "Quantitative Design of Stance Phase Controllers for Above-Knee Prostheses", abstract accepted for presentation at the VIIth International Symposium on External Control of Human Extremities, Dubrovnik, Yugoslavia, September.
- 4) Stein, J. L. and Colvin, D., 1983 "Adaptive And Sensor Based Control Of Machine Tools", Technical Report No. UM-MEAM-83-19, Dept. of Mechanical Engineering and Applied Mechanics, Univ. of Michigan, Ann Arbor, Michigan Sept.
- 5) Stein, J. L., 1983 "Design Issues In The Stance Phase Control of Above-Knee Prostheses", Ph.D. Thesis, Dept. of Mechanical Engineering, M.I.T., Cambridge, MA., February.
- 6) Park, Y. and Stein, J.L. 1986 "Order Reduction Procedure of the Linear Differential Algebraic Equation," UM-MEAM-86-40.
- 7) Stein, J.L., and Park Y., 1987 "Modeling and Sensing Issues for Machine Diagnostics", Proceedings of the 14th Conference on Production Research and Technology, *Manufacturing Processes, Systems and Machines*, sponsored by NSF, and published by SME, October.

- 8) Stein, J.L., 1989 "Model-Based Machine Diagnostics Using Remote Sensing" Proceedings of the 15th Conference on Production Research and Technology *Advances in Manufacturing Systems Integration and Processes*, Publ. by SME, Dearborn, MI, January.
- 9) Stein, J.L., 1990 "Model-Based Machine Diagnostics Using Remote Sensing and Design and Control of Servo Systems" Proceedings of the 16th Conference on Production Research and Technology *Advances in Manufacturing Systems Integration and Processes*, Publ. by SME, Dearborn, MI, January.
- 10) Huh, K. and Stein J.L. 1994 "Upper Bounds of the Condition Numbers for Non-normal Matrices" Technical Brief *MEAM Technical Report NO.-94-10*, Department of Mechanical Engineering and Applied Mechanics, The University of Michigan, Ann Arbor, MI.
- 11) Stein, J.L. and Huh K. 1994 "Well-Conditioned Observers for High-Performance Low-Cost Monitoring Systems" *Proceedings of the 1994 NSF Design and Manufacturing Grantees Conference*, pp. 473-4, SME Publication, Dearborn, MI. ISBN:0-87263-441-8.
- 12) Stein, J.L. and Tu, J. 1994 "Model-Based Preload Monitoring for Machine Tool Spindle Bearings" *Proceedings of the 1994 NSF Design and Manufacturing Grantees Conference*, pp. 475-6, SME Publication, Dearborn, MI. ISBN:0-87263-441-8.
- 13) Wilson, B.H. and Stein, J.L. 1994 "Model-Building Assistant: An Automated Modeling Tool for Machine-Tool Drive-Trains" *Proceedings of the 1994 NSF Design and Manufacturing Grantees Conference*, p 493, SME Publication, Dearborn, MI. ISBN:0-87263-441-8.
- 14) Gibson, A.O., Stein J.L. and Tu J.F. 1997 "A Thermomechanical Model of High Speed Spindle Bearing Dynamics", Abstract accepted for presentation at the STLE 52 Annual Meeting, May 18-22, 1997, Kansas City, Missouri.

Patents and Disclosures

- 1) Invention Disclosure: Patent Description – Robust Online Vehicle Mass Estimation Using Recursive Least Squares with Multilevel Supervisory Data Extraction (2006)