

Publications

Books and Monographs

1. M. Hanss: Identifikation von Fuzzy-Modellen und ihre Anwendung zur Regelung nichtlinearer Prozesse. Dissertation, Bericht aus dem Institut A für Mechanik der Universität Stuttgart 1998/6, 1998.
2. M. Hanss: Applied Fuzzy Arithmetic – An Introduction with Engineering Applications. Textbook. Springer-Verlag, Berlin, 2005.
3. K. Willner, M. Hanss (eds.): Angewandte und Experimentelle Mechanik – Ein Querschnitt. Der Andere Verlag, Tönning, Lübeck und Marburg, 2006.

Articles in Books and Journals

4. M. Hanss: Ein Fuzzy-Prädiktor für Bioprozesse. B. Reusch (ed.): *Fuzzy Logik – Theorie und Praxis*, Springer-Verlag, Berlin, 1994, pp. 235–242.
5. M. Hanss, M. Estler: Anmerkungen zur On-line-Parameterschätzung für die adaptive Regelung von Mehrgrößensystemen. *Automatisierungstechnik*, 42:198–205, 1994.
6. M. Hanss: Eine Methode zur Identifikation von Fuzzy-Modellen. *Automatisierungstechnik*, 44:71–78, 1996.
7. M. Hanss: Identification of enhanced fuzzy models with special membership functions and fuzzy rule bases. *Engineering Applications of Artificial Intelligence*, 12:309–319, 1999.
8. M. Hanss, A. Kistner: Fuzzy-Methoden. *Schriftenreihe des Informatikverbunds Stuttgart (IVS-Schriftenreihe)*, 2(Softcomputing):5–16, 1999.
9. M. Hanss, K. Willner: A fuzzy arithmetical approach to the solution of finite element problems with uncertain parameters. *Mechanics Research Communications*, 27(3):257–272, 2000.
10. O. Nehls, M. Hanss: Using fuzzy arithmetic to simulate the human glucose uptake with uncertain parameters. *Diabetes, Nutrition and Metabolism*, 13(4), 2000.
11. M. Hanss, S. Hurlebaus, L. Gaul: Fuzzy sensitivity analysis for the identification of material properties of orthotropic plates from natural frequencies. *Mechanical Systems and Signal Processing*, 16(5):769–784, 2002.

12. M. Hanss: The transformation method for the simulation and analysis of systems with uncertain parameters. *Fuzzy Sets and Systems*, 130(3):277–289, 2002.
13. M. Hanss, S. Oexl, L. Gaul: Identification of a bolted-joint model with uncertain parameters loaded normal to the contact interface. *Mechanics Research Communications*, 29(2-3):177–187, 2002.
14. A. P. S. Selvadurai, M. F. Hanss: Contaminant transport in a thin layer: the influence of fuzzy orthotropic diffusivity. *Modelling and Simulation in Materials Science and Engineering*, 11:57–75, 2003.
15. M. Hanss, S. Oexl, L. Gaul: FRF simulation of structural joints with uncertain parameters. *PAMM – Proc. of Applied Mathematics and Mechanics*, 3:106–107, 2003.
16. M. Hanss: The extended transformation method for the simulation and analysis of fuzzy-parameterized models. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, 11(6):711–727, 2003.
17. M. Hanss, A. Klimke: On the reliability of the influence measure in the transformation method of fuzzy arithmetic. *Fuzzy Sets and Systems*, 143(3):371–390, 2004.
18. D. Brunner, J. Becker, M. Junge, M. Maess, J. Roseira, M. Hanss: A fuzzy boundary element method for acoustics. K. Willner, M. Hanss (eds.): *Angewandte und Experimentelle Mechanik – Ein Querschnitt*. Der Andere Verlag, Tönning, Lübeck und Marburg, 2006, pp. 25–45.
19. M. Hanss, U. Gauger, S. Turrin: Fuzzy arithmetical robustness analysis of automotive structures with uncertainties. K. Willner, M. Hanss (eds.): *Angewandte und Experimentelle Mechanik – Ein Querschnitt*. Der Andere Verlag, Tönning, Lübeck und Marburg, 2006, pp. 47–60.
20. O. Giannini, M. Hanss: The Component Mode Transformation Method: A fast implementation of fuzzy arithmetic for uncertainty management in structural dynamics. *Journal of Sound and Vibration* 311: 1340—1357, 2008.
21. U. Gauger, S. Turrin, M. Hanss, L. Gaul: A new uncertainty analysis for the transformation method. *Fuzzy Sets and Systems* 159(11):1273–1291, 2008.
22. O. Giannini, M. Hanss: An interdependency index for the outputs of uncertain systems. *Fuzzy Sets and Systems* 159(11):1292–1308, 2008.
23. M. Junge, D. Brunner, J. Becker, M. Maess, J. Roseira, M. Hanss: Combination of fuzzy arithmetic and a fast boundary element method for acoustic simulation with uncertainties. *Journal of Computational Acoustics* 17(1):45–69, 2009.

24. F. Fleissner, M. Hanss, T. Haag, P. Eberhard: Uncertainty analysis for a particle model of granular chute flow. *Computer Modeling in Engineering & Sciences (CMES) – Special Issue on Contact Mechanics in the Engineering Sciences II* 52(2): 181–196, 2009.
25. S. Turrin, M. Hanss, A. P. S. Selvadurai: An Approach to Uncertainty Analysis of Rockfall Simulation. *Computer Modeling in Engineering & Sciences (CMES) – Special Issue on Contact Mechanics in the Engineering Sciences III* 52(3): 237–258, 2009.
26. T. Haag, M. Hanss: Model assessment using inverse fuzzy arithmetic. E. Hüllermeier, R. Kruse, F. Hoffmann (eds.): *Information Processing and Management of Uncertainty in Knowledge-Based Systems*, Communications in Computer and Information Science, Volume 81, Part 5, Part 6, 461–470, 2010.
27. T. Haag, J. Herrmann, M. Hanss: Identification procedure for epistemic uncertainties using inverse fuzzy arithmetic. *Mechanical Systems and Signal Processing* 24(7): 2021–2034, 2010.
28. M. Hanss, S. Turrin: A fuzzy-based approach to comprehensive modeling and analysis of systems with epistemic uncertainties. *Structural Safety* 32(6): 433–441, 2010.
29. D. Moens, M. Hanss: Non-probabilistic finite element analysis for uncertainty treatment in applied mechanics: Recent advances. *Finite Elements in Analysis and Design – Special Issue on Uncertainty in Structural Dynamics* 47(1): 4–16, 2011.
30. M. Hanss, J. Herrmann, T. Haag: Vibration analysis of fluid-filled piping systems with epistemic uncertainties. A. K. Belyaev, R. S. Langley (eds.): *IUTAM Symposium on the Vibration Analysis of Structures with Uncertainties, Saint Petersburg, Russia, 2009*, 43–56, Springer, 2011.
31. T. Haag, M. Hanss: Comprehensive modeling of uncertain systems using fuzzy set theory. I. Elishakoff, C. Soize (eds.): *Nondeterministic Mechanics*, CISM Courses and Lectures, Vol. 539, Springer, Wien – New York, 2012.
32. T. Haag, S. Carvajal González, M. Hanss: Model validation and selection based on inverse fuzzy arithmetic. *Mechanical Systems and Signal Processing* 32: 116–134, 2012.
33. N.-P. Walz, M. Hanss: On the analysis of multibody systems in the presence of uncertainties. Alber, H.-D., Kraynyukova, N. and Tropea, C. (eds.): Special Issue – 83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Darmstadt 2012, *PAMM* 12(1): 57–58, 2012.
34. C. Schaal, M. Krautter, M. Hanss: Dispersion in cylindrical waveguides with uncertain parameters. Alber, H.-D., Kraynyukova, N. and Tropea, C. (eds.):

- Special Issue – 83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Darmstadt 2012, *PAMM* 12(1): 537–538, 2012.
35. W. Wieland, M. Hanss, S.-R. Mehra: Untersuchungen der Erschütterungsprognosegenauigkeit von Berechnungsmethoden durch baudynamische Messungen. *LBP-Mitteilungen* 6(42), 2012.
 36. M. Hanss: Fuzzy arithmetic for uncertainty analysis. R. Seising, E. Trillas, C. Moraga, S. Termini (eds.) *On Fuzziness – A Homage to Lotfi A. Zadeh – Volume 1*, Studies in Fuzziness and Soft Computing, Vol. 298, 235–240, Springer, 2013.
 37. N.-P. Walz, M. Hanss: Fuzzy arithmetical analysis of multibody systems with uncertainties. *Archive of Mechanical Engineering* Vol. LX, 109–125, De Gruyter, 2013
 38. N.-P. Walz, M. Hanss: Sparse-grid surrogate models for uncertainty analysis. L. Cvetković, T. Atanacković and V. Kostić (eds.): Special Issue – 84th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Novi Sad 2013, *PAMM*, 13 (1): 389–390, 2013.
 39. A. Hanselowski, M. Hanss: Analysis of epistemic uncertainty for the friction-induced vibration. *ZAMM – Zeitschrift für Angewandte Mathematik und Mechanik*, 94(11): 933–944, 2014.
 40. A. Hanselowski, M. Hanss: Uncertainty and sensitivity analysis of different models of brake squeal. P. Steinmann and G. Leugering (eds.): Special Issue – 85th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Erlangen 2014, *PAMM* 14(1): 277–278, 2014.
 41. C. Schaal, M. Hanss: Uncertainty analysis for crack detection in cylindrical waveguides. P. Steinmann and G. Leugering (eds.): Special Issue – 85th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Erlangen 2014, *PAMM* 14(1): 695–696, 2014.
 42. I. Iroz, S. Carvajal, M. Hanss, P. Eberhard: Inverse fuzzy arithmetic for the quality assessment of substructured models. *Procedia IUTAM* 13: 34–42, 2015.
 43. N.-P. Walz, M. Burkhardt, M. Hanss, P. Eberhard: Sensitivity computation for uncertain dynamical systems using high-dimensional model representation and hierarchical grids. *Procedia IUTAM* 13: 127–137, 2015.
 44. M. Hanss, P. Bestle, P. Eberhard: A reproducible excitation mechanism for analyzing electric guitars. G. Zavarise, P. Cinnella and M. Campiti (eds.): Special Issue – 86th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Lecce, Italy, 2015, *PAMM* 15(1): 45–46, 2015.

45. A. Hofmann, N.-P. Walz, M. Hanss: An Approach to Feed-Forward Controller Design for Underactuated Multibody Systems in the Presence of Uncertainty. V. Bach and H. Fassbender (eds.): Special Issue – Joint 87th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM) and Deutsche Mathematiker-Vereinigung (DMV), Braunschweig, Germany, 2016, *PAMM* 16(1): 59–60, 2016.
46. N.-P. Walz, M. Burkhardt, P. Eberhard, M. Hanss: A comprehensive fuzzy uncertainty analysis of a controlled nonlinear system with unstable internal dynamics. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering* 1(4):041008, 2015. doi:10.1115/1.4030810
47. N.-P. Walz, M. Hanss: Sparse-grid surrogate models for uncertainty analysis. L. Cvetković, T. Atanacković and V. Kostić (eds.): Special Issue – 84th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Novi Sad 2013, *PAMM*, 13 (1): 389–390, 2013.
48. I. Iroz, M. Hanss, P. Eberhard: Transient simulation of friction-induced vibrations using an elastic multibody approach. *Multibody System Dynamics* 39(1): 37–49, 2017.
49. P. Bestle, P. Eberhard, M. Hanss: Musical instruments – Sound synthesis of virtual idiophones. *Journal of Sound and Vibration* 395: 187–200, 2017.
50. M. Hanss, M. Mäck: Certainly uncertain - the charm of fuzzy predictions. *Procedia Engineering* 199: 48–55, 2017.
51. M. Mäck, D. Hose, M. Hanss: On using fuzzy arithmetic in optimization problems with uncertain constraints. C. Könke and C. Trunk (eds.): Special Issue – Joint 88th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Weimar, Germany, 2017, *PAMM* 17: 57–58, 2017.
52. D. Hamann, N.-P. Walz, A. Fischer, M. Hanss, P. Eberhard: Fuzzy arithmetical stability analysis of uncertain machining systems. *Mechanical Systems and Signal Processing* 98: 534–547, 2018.
53. D. Hose, D. Hamann, M. Hanss, P. Eberhard: A data-driven possibilistic approach to the identification of uncertain stability lobe diagrams. Special Issue – 89th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), München, Germany, 2018, *PAMM* 18(1), 2018.
54. M. Mäck, I. Caylak, P. Edler, S. Freitag, M. Hanss, R. Mahnken, G. Meschke, E. Penner: Optimization with constraints considering polymorphic uncertainties. Special Issue: Polymorphic Uncertainty Modelling for Numerical Design of Structures – Part I, *Surveys for Applied Mathematics and Mechanics (GAMM-Mitteilungen)* 42(1), 2019.

55. J. Biebler, M. Mäck, J. Nitzler, M. Hanss, P.-S. Koutsourelakis, W. A. Wall: Multifidelity approaches for uncertainty quantification. Special Issue: Polymorphic Uncertainty Modelling for Numerical Design of Structures – Part II, *Surveys for Applied Mathematics and Mechanics (GAMM-Mitteilungen)* 42(2), 2019.
56. D. Hose, M. Hanss: Fuzzy linear least squares for the identification of possibilistic regression models. *Fuzzy Sets and Systems* 367: 82–95, 2019. doi:10.1016/j.fss.2018.10.003
57. D. Hose, M. Mäck, M. Hanss: Robust optimization in possibility theory. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems*, Part B: Mechanical Engineering 5(4): 041001, 2019. doi:10.1115/1.4044037
58. D. Hose, M. Hanss: Possibilistic calculus as a conservative counterpart to probabilistic calculus. *Mechanical Systems and Signal Processing* 133, 2019. doi:10.1016/j.ymssp.2019.106290
59. M. Mäck, M. Hanss: Efficient possibilistic uncertainty analysis of a car crash scenario using a multi-fidelity approach. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems*, Part B: Mechanical Engineering 5(4): 041015., 2019. doi:10.1115/1.4044243
60. D. Hose, M. Hanss: On data-based estimation of possibility distributions. *Fuzzy Sets and Systems* 399: 77–94, 2020. doi:10.1016/j.fss.2020.03.017
61. M. Mäck, M. Hanss: An advanced sampling technique for possibilistic uncertainty propagation. *Mechanical Systems and Signal Processing* 147: 107064, 2021. doi:10.1016/j.ymssp.2020.107064
62. D. Hose, M. Hanss: A universal approach to imprecise probabilities in possibility theory,. *International Journal of Approximate Reasoning* 133: 133–158, 2021.
63. D. Hose, M. Hanss: A recursive formulation of possibilistic filters. *Proceedings of Machine Learning Research* 147: 169–179, 2021.
64. A. Gray, D. Hose, M. De Angelis, M. Hanss, S. Ferson: Possibilistic arithmetic using copulas. *Proceedings of Machine Learning Research* 147: 180–190, 2021.
65. B. Fröhlich, D. Hose, O. Dieterich, M. Hanss, P. Eberhard: Uncertainty quantification of large-scale dynamical systems using parametric model order reduction. *Mechanical Systems and Signal Processing* 171: 108855, 2022. doi:10.1016/j.ymssp.2022.108855
66. A. Brauchler, D. Hose, P. Ziegler, M. Hanss, P. Eberhard: Distinguishing geometrically identical instruments: Possibilistic identification of material parameters in a parametrically model order reduced finite element model of a classical guitar. *Journal of Sound and Vibration* 535: 117071, 2022. doi.org/10.1016/j.jsv.2022.117071

67. T. Könecke, H. Ebel, M. Hanss: Possibilistic robot localization using visual landmarks. Special Issue – 94th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Magdeburg, Germany, 2024, *PAMM*, 2025; 25:e70002. doi.org/10.1002/pamm.70002

Papers in Conference Proceedings

68. M. Hanss: Fuzzy-model-based control of biotechnological processes. H.-J. Zimmermann (ed.): *Second European Congress on Intelligent Techniques and Soft Computing - EUFIT '94*, pp. 1044–1047, Aachen, 1994. Verlag der Augustinus Buchhandlung.
69. M. Hanss: Design and optimization of a nonlinear fuzzy controller using fuzzy process models. H.-J. Zimmermann (ed.): *Fourth European Congress on Intelligent Techniques and Soft Computing - EUFIT '96*, pp. 1875–1880, Aachen, 1996. Verlag Mainz.
70. M. Hanss: Enhanced fuzzy modeling using special membership functions and fuzzy rule bases. *Proc. of the 3rd IFAC Symposium on Intelligent Components and Instruments for Control Applications - SICICA '97*, pp. 561–566, Annecy, France, 1997.
71. M. Hanss: Fuzzy-logic-based system modeling and its application to nonlinear process control. A. Sydow (ed.): *Proc. of the 15th IMACS World Congress on Scientific Computation, Modelling and Applied Mathematics*, volume 4, pp. 431–436, Berlin, 1997. Wissenschaft & Technik Verlag.
72. M. Hanss: On developing enhanced fuzzy models for nonlinear process control. *Proc. of the 16th Annual Meeting of the North American Fuzzy Information Processing Society - NAFIPS '97*, pp. 27–32, Syracuse, NY, USA, 1997.
73. M. Hanss, K. Willner, S. Guidati: On applying fuzzy arithmetic to finite element problems. *Proc. of the 17th International Conference of the North American Fuzzy Information Processing Society - NAFIPS '98*, pp. 365–369, Pensacola Beach, FL, USA, 1998.
74. A. Kistner, M. Hanss: Enhanced fuzzy models for nonlinear process control. *Proc. of the 8th Japanese-German Seminar on Nonlinear Problems in Dynamical Systems – Theory and Applications*, pp. 61–70, Kobe, Japan, 1998.
75. K. Willner, M. Hanss: Finite element problems with uncertain parameters. *Proc. of the 6th Pan-American Congress of Applied Mechanics - PACAM VI 1999*, pp. 397–400, Rio de Janeiro, Brazil, 1999.

76. M. Hanss: On the implementation of fuzzy arithmetical operations for engineering problems. *Proc. of the 18th International Conference of the North American Fuzzy Information Processing Society - NAFIPS '99*, pp. 462–466, New York, NY, USA, 1999.
77. M. Hanss, K. Willner: On using fuzzy arithmetic to solve problems with uncertain model parameters. *Proc. of the International Colloquium on Numerical Modelling of Uncertainties*, pp. 85–92, Valenciennes, France, 1999.
78. M. Hanss: A nearly strict fuzzy arithmetic for solving problems with uncertainties. *Proc. of the 19th International Conference of the North American Fuzzy Information Processing Society - NAFIPS 2000*, pp. 439-443, Atlanta, GA, USA, 2000.
79. M. Hanss, O. Nehls: Simulation of the human glucose metabolism using fuzzy arithmetic. *Proc. of the 19th International Conference of the North American Fuzzy Information Processing Society - NAFIPS 2000*, pp. 201-205, Atlanta, GA, USA, 2000.
80. M. Hanss, L. Gaul: Simulation and analysis of a friction model with uncertain parameters using fuzzy arithmetic. *Proc. of the 21st Iberian Latin American Congress on Computational Methods in Engineering - CILAMCE 2000* (CDROM), Rio de Janeiro, Brazil, 2000.
81. M. Hanss: A fuzzy arithmetical approach to robust control. *Proc. of the Joint 9th IFSA and 20th NAFIPS International Conference* (CDROM), Vancouver, BC, Canada, 2001.
82. M. Hanss, O. Nehls: Enhanced parameter identification for complex biomedical models on the basis of fuzzy arithmetic. *Proc. of the Joint 9th IFSA and 20th NAFIPS International Conference* (CDROM), Vancouver, BC, Canada, 2001.
83. M. Hanss, A. P. S. Selvadurai: Influence of fuzzy variability on the estimation of hydraulic conductivity of transversely isotropic geomaterials. *Proc. of the NUMOG VIII – International Symposium on Numerical Models in Geomechanics*, pp. 675–680, Rome, Italy, 2002.
84. M. Hanss, S. Oexl, L. Gaul: Simulation and analysis of structural joint models with uncertainties. *Proc. of the Int. Conference on Structural Dynamics Modelling*, pp. 165–174, Madeira, Portugal, 2002.
85. S. Oexl, M. Hanss, L. Gaul: Identification of a normally-loaded joint model with fuzzy parameters. *Proc. of the Int. Conference on Structural Dynamics Modelling*, pp. 175–184, Madeira, Portugal, 2002.
86. A. Kistner, M. Hanss, O. Nehls: A refined parameter identification technique for complex process models. *Proc. of the 10th Japanese-German Seminar on Nonlinear Problems in Dynamical Systems – Theory and Applications*, pp. 87–94, Hakui, Ishikawa, Japan, 2002.

87. L. Gaul, S. Oexl, M. Hanss: Inverse fuzzy arithmetic for model identification of bolted joints. *Proc. of the 21st International Modal Analysis Conference – IMAC XXI* (CDROM), Kissimmee, FL, USA, 2003.
88. M. Hanss: Simulation and analysis of fuzzy-parameterized models with the extended transformation method. *Proc. of the 22nd NAFIPS International Conference*, pp. 462–467, Chicago, IL, USA, 2003.
89. M. Hanss: An approach to inverse fuzzy arithmetic. *Proc. of the 22nd NAFIPS International Conference*, pp. 474–479, Chicago, IL, USA, 2003.
90. A. Kistner, M. Hanss, O. Nehls: A fuzzy sensitivity analysis for improved parameter identification in human metabolism models. *Proc. of the IASTED International Conference on Intelligent Systems and Control (ISC 2003)*, pp. 57–62, Salzburg, Austria, 2003.
91. M. Hanss, A. Kistner: LQR design for systems with uncertain parameters. *Proc. of the 48th International Scientific Colloquium* (CDROM), Ilmenau, 2003.
92. M. Hanss, K. Willner: Fuzzy arithmetical modeling and simulation of vibrating structures with uncertain parameters. *Proc. of the International Conference on Noise & Vibration Engineering – ISMA 2004*, pp. 3079–3093, Leuven, Belgium, 2004.
93. M. Hanss, U. Gauger, L. Gaul: Modeling and simulation of vibrating automotive components with uncertain parameters using fuzzy arithmetic. *Proc. of the 23rd International Modal Analysis Conference – IMAC XXIII*, Orlando, FL, USA, 2005.
94. M. Hanss, K. Willner: On the use of fuzzy arithmetic for automotive crash simulations in the presence of uncertainty. *Proc. of the 20th Canadian Congress of Applied Mechanics – CANCAM 2005*, pp. 590–591, Montréal, QC, Canada, 2005.
95. U. Gauger, S. Turrin, M. Hanss, L. Gaul: On a generalized buckling problem with fuzzy-valued material and support parameters. *Proc. of the 20th Canadian Congress of Applied Mechanics – CANCAM 2005*, pp. 594–595, Montréal, QC, Canada, 2005.
96. K. Willner, M. Hanss: Fuzzy arithmetical modeling and simulation of structures with uncertain parameters. *Proc. of the Third MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, MA, USA, 2005.
97. U. Gauger, M. Hanss, L. Gaul: Fuzzy arithmetical finite element modeling of automotive components with uncertain parameters. *Proc. of the 8th U.S. National Congress on Computational Mechanics*, Austin, TX, USA, 2005.
98. U. Gauger, M. Hanss, L. Gaul: Fuzzy arithmetic for the finite element modeling of structures in the presence of uncertainty. *Proc. of the 18th Symposium on Simulation Technique – ASIM 2005*, Erlangen, Germany, 2005.

99. M. Hanss, A. Kistner: A hybrid fuzzy approach to optimal control of uncertain systems. *Proc. of the International Conference on Systems, Man and Cybernetics – IEEE SMC 2005*, pp. 1467–1472, Hawaii, USA, 2005.
100. M. Hanss: Fuzzy arithmetic – a new approach to modeling and simulation of uncertain systems. R. Mikut, M. Reischl (eds.): *Proc. of the 15th Workshop Computational Intelligence*, pp. 74–88, Dortmund, Germany, 2005.
101. M. Hanss, A. Pieringer, J. Becker, M. Maess, L. Gaul: Fuzzy analysis of actively damped piezoelectric structures with uncertainties. *Proc. of the 24th International Modal Analysis Conference – IMAC XXIV*, Saint Louis, MO, USA, 2006.
102. U. Gauger, M. Hanss, L. Gaul: On the inclusion of uncertain parameters in brake squeal analysis. *Proc. of the 24th International Modal Analysis Conference – IMAC XXIV*, Saint Louis, MO, USA, 2006.
103. O. Giannini, M. Hanss: Model reduction for uncertainty quantification of mechanical structures by the component mode transformation method. *Proc. of the 9th International Conference on Recent Advances in Structural Dynamics – RASD 2006*, Southampton, UK (paper# 103).
104. S. Turrin, M. Hanss, L. Gaul: Fuzzy arithmetical vibration analysis of a windshield with uncertain parameters. *Proc. of the 9th International Conference on Recent Advances in Structural Dynamics – RASD 2006*, Southampton, UK (paper# WIP 5).
105. M. Hanss, U. Gauger, S. Turrin: Fuzzy arithmetical robustness analysis of mechanical structures with uncertainties. *Proc. of the 8th International Conference on Computational Structures Technology – CST 2006*, Las Palmas de Gran Canaria, Spain (paper# 58).
106. O. Giannini, U. Gauger, M. Hanss: Analysis of the uncertain dynamic behavior of an automotive control unit using the component mode transformation method. *Proc. of the International Conference on Noise & Vibration Engineering – ISMA 2006*, pp. 1925–1933, Leuven, Belgium, 2006.
107. S. Turrin, M. Hanss, L. Gaul: Fuzzy uncertainty analysis in automotive crash simulation. *Proc. of the International Conference on Noise & Vibration Engineering – ISMA 2006*, pp. 2015–2021, Leuven, Belgium, 2006.
108. U. Gauger, M. Hanss, L. Gaul: Zur Simulation des Bremsenquietschens mit unsicheren Parametern. *Proc. of the 33rd German Annual Conference on Acoustics – DAGA 2007*, Stuttgart, Germany, 2007.
109. M. Hanss, J. Becker, M. Maess, L. Gaul: Fuzzy arithmetical analysis of smart structures with uncertainties. *Proc. of the 1st International Conference on Uncertainty in Structural Dynamics – USD 2007*, Sheffield, UK, 2007.

110. S. Turrin, M. Hanss: Fuzzy arithmetical uncertainty analysis - applications to automotive crash. *Proc. of the 1st International Conference on Uncertainty in Structural Dynamics – USD 2007*, pp. 69–78, Sheffield, UK, 2007.
111. S. Turrin, M. Hanss: Fuzzy arithmetical design optimization with respect to automotive crash. *Proc. of the Euromech Colloquium 482 – Efficient Methods for Robust Design and Optimization*, London, UK, 2007.
112. J. Becker, M. Maess, M. Hanss: Fuzzy arithmetical robustness analysis of a structural control system against uncertainty-induced spillover. *Proc. of the International Conference on Systems, Man and Cybernetics – IEEE SMC 2007*, Montréal, QC, Canada, 2007.
113. S. Turrin, M. Hanss: Structural design optimization using fuzzy arithmetic. *Proc. of the RTO/AVT-147 Symposium on Computational Uncertainty*, Athens, Greece, 2007.
114. S. Ackermann, L. Gaul, M. Hanss, and T. Hambrecht: PCA for Detection of Globally Important Input Parameters in Nonlinear Finite Element Analysis. *Weimar Optimization and Stochastic Days 5.0*, Weimar, 2008.
115. S. Turrin, M. Hanss, A. P. S. Selvadurai: An approach to uncertainty analysis of landslide problems. *Proc. of the Leuven Symposium on Applied Mechanics in Engineering – LSAME.08*, Leuven, Belgium, 2008.
116. M. Hanss, S. Turrin: "The future is fuzzy" – An approach to comprehensive modeling and analysis of systems with epistemic uncertainties. *Proc. of the Leuven Symposium on Applied Mechanics in Engineering – LSAME.08*, Leuven, Belgium, 2008.
117. F. Fleissner, M. Hanss, T. Haag, P. Eberhard: Analysis of granular chute flow based on a particle model including uncertainties. *Proceedings of the 1st International Conference on Computational Contact Mechanics (ECCOMAS) 52(2)*: Lecce, Italy, 2009.
118. T. Haag, P. Reuß, S. Turrin, M. Hanss: An inverse model updating procedure for systems with epistemic uncertainties. *Proc. of the 2nd International Conference on Uncertainty in Structural Dynamics – USD 2009*, pp. 116–125, Sheffield, UK, 2009.
119. M. Hanss, S. Turrin: A fuzzy-based approach to comprehensive modeling and analysis of systems with epistemic uncertainties. *Proc. of the 10th International Conference on Structural Safety and Reliability – ICOSSAR 2009*, Osaka, Japan, 2009.
120. T. Haag, P. Reuß, M. Hanss: An approach to the identification of uncertain surrogate models for complex systems. R. Hoffmann, E. Hüllermeier (eds.): *Proc. of the 19th Workshop Computational Intelligence*, pp. 50–60, Dortmund, Germany, 2009.

121. T. Haag, M. Hanss: Inverse fuzzy arithmetic for the identification of simplified friction models *Proc. of the IV European Conference on Computational Mechanics – ECCM 2010*, Paris, France, 2010 (extended abstract only).
122. T. Haag, P. Reuß, M. Hanss: An inverse fuzzy arithmetical method for the validation, selection and optimization of models for mechanical systems. *Proc. of the 3rd International Conference on Uncertainty in Structural Dynamics – USD 2010*, Leuven, Belgium, 2010.
123. H. Netzmann, M. Hanss, L. Gaul: Application of selected uncertainty analysis methods to NVH development of motorcycle engines. *Proc. of the 3rd International Conference on Uncertainty in Structural Dynamics – USD 2010*, Leuven, Belgium, 2010.
124. C. Schaal, M. Hanss: Qualitätsbewertung von Modellen mittels Unsicherheitsanalysen für die wellengestützte Strukturüberwachung. *Proc. of the 37th German Annual Conference on Acoustics – DAGA 2011*, Düsseldorf, Germany, 2011.
125. S. Turrin, T. Haag, M. Hanss: A fuzzy arithmetical approach to the quantification of nonlinearity. *Proc. of the 8th International Conference on Structural Dynamics – EURODYN 2011*, Leuven, Belgium, 2011.
126. M. Hanss, J. Herrmann, T. Haag: Eine Methode zur Fluid-Struktur-Simulation unter Einbeziehung von Unsicherheiten. *Kongress für Simulation im Produktentstehungsprozess – SIMPEP 2011*, Veitshöchheim, Germany, 2011.
127. N.-P. Walz, M. Hanss: A fuzzy arithmetical approach to the inclusion of uncertainties in multibody systems. *Proc. of the 2nd Joint International Conference on Multibody System Dynamics – IMSD 2012*, Stuttgart, Germany, 2012.
128. N.-P. Walz, M. Fischer, M. Hanss, P. Eberhard: Uncertainties in multibody systems – potentials and challenges. *Proc. of the 4th International Conference on Uncertainty in Structural Dynamics – USD 2012*, Leuven, Belgium, 2012.
129. C. Schaal, M. Hanss: Modeling wave propagation in coupled waveguides with uncertain parameters. *Proc. of the 4th International Conference on Uncertainty in Structural Dynamics – USD 2012*, Leuven, Belgium, 2012.
130. C. Schaal, M. Hanss: Fuzzy arithmetical assessment of wave propagation models for multi-wire cables. Allemang, R., De Clerck, J., Niezrecki, C. and Wicks, A. (eds.): *Special Topics in Structural Dynamics*, Volume 6, 177 – 185, Springer, New York, 2013.
131. N.-P. Walz, M. Hanss: Analysis of uncertain systems using fuzzy arithmetic and adaptive sparse grids. *Proc. of the 11th International Conference on Structural Safety and Reliability – ICOSSAR 2013*, New York, NY, USA, 2013.

132. C. Schaal, M. Hanss: Uncertainty analysis for damaged multi-wire cables. *Proc. of the 11th International Conference on Structural Safety and Reliability – ICOSSAR 2013*, New York, NY, USA, 2013.
133. N.-P. Walz, M. Hanss: Analysis of uncertain systems using fuzzy arithmetic and adaptive sparse grids. *Proc. of the ICVRAM-ISUMA 2014 - The Second International Conference on Vulnerability and Risk Analysis and Management (ICVRAM) and the Sixth International Symposium on Uncertainty, Modeling, and Analysis (ISUMA)*, Liverpool, UK, 2014.
134. P. Bestle, P. Eberhard, M. Hanss: Experimental and Numerical Analysis of the Musical Behavior of Triangle Instruments. *Proc. of the 5th European Conference of Computational Mechanics – ECCM V*, Barcelona, Spain, 2014.
135. I. Iroz, S. Carvajal, M. Hanss, P. Eberhard: Effect of substructuring techniques on the simulation of friction-induced vibrations. *Proc. of the ISMA/USD 2014*, Leuven, Belgium, 2014.
136. N.-P. Walz, M. Hanss: Efficient computation of influence measures for uncertainty analysis using sparse grids. *Proc. of the ISMA/USD 2014*, Leuven, Belgium, 2014.
137. A. Hanselowski, S. Ihrle, M. Hanss: A fuzzy model updating technique motivated by Bayesian inference. *Proc. of the 1st International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2015*, Crete Island, Greece, 2015.
138. I. Iroz, M. Hanss, P. Eberhard: Influence of uncertainties on the stability of a self-excited elastic multibody system. *Proc. of the 1st International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2015*, Crete Island, Greece, 2015.
139. A. Hanselowski, M. Hanss: A model updating method based on inverse fuzzy arithmetic. *Proc. of the 3rd ECCOMAS Young Investigators Conference – YIC GACM 2015*, Aachen, Germany, 2015.
140. W. Schiehlen, M. Hanss, I. Iroz: Robust design of road vehicle suspensions using fuzzy methods. *Proc. of the 24th International Symposium on Dynamics of Vehicles on Roads and Tracks – IAVSD 2015*, Graz, Austria, 2015.
141. I. Iroz, M. Hanss, P. Eberhard: Simulation of friction-induced vibrations using elastic multibody models. *ECCOMAS Thematic Conference on Multibody Dynamics*, Barcelona, Spain, 2015.
142. I. Iroz, M. Hanss, P. Eberhard: An elastic multibody approach for the efficient transient simulation of an industrial brake system. *International Conference on Multibody System Dynamics IMSD 2016*, Montréal, QC, Canada, 2016.

143. A. Hanselowski, S. Ihrle, M. Hanss: Fuzzy Bayesian estimation for the identification of fuzzy-parameterized models in the framework of model updating. *Proc. of the ISMA/USD 2016*, Leuven, Belgium, 2016.
144. I. Iroz, S. Carvajal, M. Hanss, P. Eberhard: Time-domain investigation of brake-system dynamics based on elastic multibody systems and fuzzy arithmetical uncertainty analyses. *Proc. of the ISMA/USD 2016*, Leuven, Belgium, 2016.
145. A. Hofmann, M. Hanss: A fuzzy arithmetical strategy for robust controller design in the presence of model uncertainties. *Proc. of the ISMA/USD 2016*, Leuven, Belgium, 2016.
146. M. Mäck, M. Hanss: An approach to robust design of a crumple-zone structure using fuzzy arithmetic. *Proc. of the 2nd International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2017*, Rhodes Island, Greece, 2017.
147. D. Hamann, N.-P. Walz, A. Fischer, M. Hanss, P. Eberhard: Stability analysis of machining processes with parameter uncertainty. *Proc. of the 9th European Nonlinear Dynamics Conference – ENOC 2017*, Budapest, Hungary, 2017.
148. A. Hofmann, M. Hanss: Fuzzy arithmetical controller design for active road vehicle suspension in the presence of uncertainties. *Proc. of the 22nd IEEE International Conference on Methods and Models in Automation and Robotics – MMAR 2017*, Miedzyzdroje, Poland, 2017.
149. D. Hose, M. Mäck, M. Hanss: A probabilistic approach to the optimization of uncertain systems. *Proc. of the ICVRAM ISUMA UNCERTAINTIES Conference 2018*, Florianópolis, SC, Brazil, 2018.
150. D. Hose, M. Hanss: Possibilistic identification of reliable finite impulse response models. *Proc. of the 8th International Workshop on Reliable Engineering Computing – REC 2018*, Liverpool, UK, 2018.
151. D. Hose, M. Hanss: On inverse fuzzy arithmetical problems in uncertainty analysis. *Proc. of the ISMA/USD 2018*, Leuven, Belgium, 2018.
152. M. Mäck, M. Hanss: A multi-fidelity approach for possibilistic uncertainty analysis. *Proc. of the ISMA/USD 2018*, Leuven, Belgium, 2018.
153. M. Mäck, M. Hanss: Uncertainty analysis of a car crash scenario using a possibilistic multi-fidelity scheme. *Proc. of the 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2019*, Crete Island, Greece, 2019.
154. D. Hose, M. Hanss: Towards a general theory for data-based possibilistic parameter inference. *Proc. of the 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2019*, Crete Island, Greece, 2019.

155. D. Hose, M. Mäck, M. Hanss: On probability-possibility consistency in high-dimensional propagation problems. *Proc. of the 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2019*, Crete Island, Greece, 2019.
156. A. Hofmann, M. Hanss, P. Eberhard: Possibilistic investigation of mechanical control systems under uncertainty. *Proc. of the 9th ECCOMAS Thematic Conference on Multibody Dynamics*, Duisburg, Germany, 2019.
157. D. Hose, M. Hanss: Consistent inverse probability and possibility propagation. *Proc. of the 11th Conference of the European Society for Fuzzy Logic and Technology – EUSFLAT 2019*, Prague, Czech Republic, 2019.
158. D. Hose, M. Hanss: On the solution of forward and inverse problems in possibilistic uncertainty quantification for dynamical systems. *Proc. of the 9th International Workshop on Reliable Engineering Computing – REC 2021*, Taormina, Italy, 2021.
159. T. Könecke, D. Hose, L. Frie, M. Hanss, P. Eberhard: Analysis of mixed uncertainty through possibilistic inference by using error estimation of reduced order surrogate models. *Proc. of the ISMA/USD 2022*, Leuven, Belgium, 2022.
160. D. Hose, M. Hanss, R. Martin: A practical strategy for valid partial prior-dependent possibilistic inference. *Proc. of the 7th International Conference on Belief Functions – BELIEF 2022*, Athens, Greece, Le Hégarat-Mascle et. al. (eds.): Lecture Notes in Artificial Intelligence, Vol. 13506, Springer, 2022
161. T. Könecke, M. Hanss: On processing heterogeneous sources of limited data for uncertainty quantification in a possibilistic framework. *Proc. of the 5th International Conference on Uncertainty Quantification in Computational Sciences and Engineering – UNCECOMP 2023*, Athens, Greece, 2023
162. J. Schneider, T. Könecke, H. Ebel, M. Hanss: Confident Robot Localization by Possibilistic Filtering. *Proc. of the 26th International Congress of Theoretical and Applied Mechanics – ICTAM 2024*, Daegu, South Korea, 2024.
163. T. Könecke, M. Hanss: Exploring possibilistic potentials in uncertainty quantification for modal analysis techniques. *Proc. of the ISMA/USD 2024*, Leuven, Belgium, 2024.