

List of Publications, Prof. Johannes Gerstmayr

Doctoral Thesis

J. Gerstmayr, *A solution strategy for elasto-plastic multibody systems and related problems*, Johannes Kepler University of Linz, May 2001, 124 pages.

Habilitation Thesis

Absolute coordinate formulations for flexible multibody dynamics systems, Johannes Kepler University of Linz, March 2007, 146 pages.

Book

1. H. Gatttringer and J. Gerstmayr (eds.). *Multibody System Dynamics, Robotics and Control*, Springer, 2012.

Articles in Peer-Reviewed Journals

1. H. Irschik, U. Pichler, J. Gerstmayr, H.J. Holl, Maysel's formula of thermoelasticity extended to anisotropic materials at finite strain, *International Journal of Solids and Structures*, Vol. 38, pp. 9479 – 9492, 2001.
2. J. Gerstmayr, H.J. Holl, and H. Irschik. Development of plasticity and damage in vibrating structural elements performing guided rigid-body motions, *Archives of Applied Mechanics* (formerly: Ingenieur-Archiv), Vol. 71, pp. 135 – 145, 2001.
3. J. Gerstmayr, H. Irschik. Vibrations of the elasto-plastic pendulum, *International Journal of Nonlinear Mechanics*, Vol. 38, pp. 111 – 122, 2003.
4. J. Gerstmayr. Modelling and simulation of elasto-plastic multibody systems with damage, *Journal of Mechanics Based Design of Structures and Machines*, Vol. 31, No. 2, pp. 201 – 227, 2003.
5. Y. Vetyukov, J. Gerstmayr, H. Irschik. Plastic multipliers as driving variables of numerical simulation in elastoplasticity, *Mechanics Research Communications*, Volume 30, No. 5, pp. 421 – 430, 2003.
6. M. Dibold, J. Gerstmayr, H. Irschik. Biaxial vibrations of an elasto-plastic beam with a prescribed rigid-body rotation including the effect of stiffening, *International Journal of Nonlinear Dynamics*, Vol. 34, pp. 147 – 157, 2003.
7. J. Gerstmayr. Strain tensors in the absolute nodal coordinate and the floating frame of reference formulation, *International Journal of Nonlinear Dynamics*, Vol. 34, pp. 133 – 145, 2003.
8. J. Gerstmayr, M. Dibold, H. Irschik. Dynamik flexibler Mehrkörpersysteme unter Berücksichtigung hydraulischer Aktorik, *E&I*, Heft 9, pp. 307 – 312, 2004.
9. J. Gerstmayr. The absolute coordinate formulation with elasto-plastic deformations, *Journal of Multibody System Dynamics*, Vol. 12, pp. 363 – 383, 2004.

10. Y. Vetyukov, J. Gerstmayr, H. Irschik. The comparative analysis of the fully nonlinear and consistently linearized equations of motion of the 2D elastic pendulum, *Journal of Computers and Structures*, Vol. 82, pp. 863 – 870, 2004.
11. J. Gerstmayr and A.A. Shabana. Analysis of thin beams and cables using the absolute nodal coordinate formulation, *Journal of Nonlinear Dynamics*, Vol. 45 (1-2), pp. 109 – 130, 2006.
12. Y. Vetyukov, J. Gerstmayr, H. Irschik. Modeling spatial motion of 3D deformable multibody systems with nonlinearities, *Journal of Multibody System Dynamics*, Vol. 15, No. 1, pp. 67 – 84, 2006.
13. J. Gerstmayr, J. Schöberl. A 3D finite element method for flexible multibody systems, *Journal of Multibody System Dynamics*, Vol. 15, pp. 309 – 324, 2006.
14. H. Sugiyama, J. Gerstmayr, A. A. Shabana. Deformation modes of the finite element cross section, *Journal of Sound and Vibration*, Vol. 298, pp. 1129 – 1149, 2006.
15. J. Gerstmayr, M.K. Matikainen. Improvement of the accuracy of stress and strain in the absolute nodal coordinate formulation, *Mechanics Based Design of Structures and Machines*, Vol. 34, No. 4, pp. 409 – 430, 2006.
16. J. Gerstmayr. Nonlinear constraints in the absolute coordinate formulation, *Acta Mechanica*, Vol. 192, pp. 191-211, 2007.
17. J. Gerstmayr, J.A.C. Ambrósio. Component mode synthesis with constant mass and stiffness matrices applied to flexible multibody systems, *International Journal for Numerical Methods in Engineering*, Vol. 73(11), pp. 1497-1517, 2008.
18. M. Stangl, J. Gerstmayr, H. Irschik. Two alternative approaches for the analysis of non-linear vibrations of pipes conveying fluid, *Journal of Sound and Vibration*, Vol. 310(3), pp. 493-511, 2008.
19. J. Gerstmayr, H. Irschik. On the correct representation of bending and axial deformation in the absolute nodal coordinate formulation with an elastic line approach, *Journal of Sound and Vibration*, Vol. 318, pp. 461-487, 2008. DOI:10.1016/j.jsv.2008.04.019.
20. J. Gerstmayr, M.K. Matikainen, A.M. Mikkola. A geometrically exact beam element based on the absolute nodal coordinate formulation, *Journal of Multibody System Dynamics*, Vol. 20, pp. 359-384, 2008.
21. H. Irschik and J. Gerstmayr, A continuum mechanics based derivation of Reissner's large-displacement finite-strain beam theory: The case of plane deformations of originally straight Bernoulli-Euler beams, *Acta Mechanica*, Vol. 206(1-2), pp. 1-21, 2009.
22. M. Dibold, J. Gerstmayr, H. Irschik. A Detailed Comparison of the Absolute Nodal Coordinate and the Floating Frame of Reference Formulation in Deformable Multibody Systems, *Journal of Computational and Nonlinear Dynamics*, Vol. 4, pp. 021006-1 – 021006-10, 2009.
23. M. Stangl, J. Gerstmayr, H. Irschik. A Large Deformation Planar Finite Element for Pipes Conveying Fluid Based on the Absolute Nodal Coordinate Formulation, *ASME Journal of Computational and Nonlinear Dynamics*, Vol. 4 (3), pp. 031009-1 - 031009-8, 2009.
24. M.K. Matikainen, R. von Herten, A.M. Mikkola, J. Gerstmayr, Elimination of high frequencies in absolute nodal coordinate formulation, *Proc. IMechE Part K Journal of Multi-body Dynamics*, Vol. 224, pp. 103 – 116, 2010.
25. H. Irschik, J. Gerstmayr, A Continuum-Mechanics Interpretation of Reissner's Non-Linear Shear-Deformable Beam Theory, *Mathematical and Computer Modelling of Dynamical Systems*, Vol. 17(1), pp. 19-29, 2011.
26. A. Pechstein, L.G. Aigner, J. Gerstmayr, A continuous material law for modeling thin-sheet piles and their frictional connection, *European Journal of Mechanics A/Solids*, Vol. 30, pp. 684 – 695, 2011.
27. L.G. Aigner, J. Gerstmayr, A.S. Pechstein. A two-dimensional homogenized model for a pack of infinitely thin sheets, *Acta Mechanica*, Vol. 218, pp. 31–43, 2011.

28. K. Nachbagauer, A.S. Pechstein, H. Irschik, J. Gerstmayr. A new locking-free formulation for planar, shear deformable, linear and quadratic beam finite elements based on the absolute nodal coordinate formulation. *Journal of Multibody System Dynamics*, 26 (3), pp. 245-263, DOI: 10.1007/s11044-011-9249-8, Open Access, 2011.
29. A. Pechstein, D. Reischl, J. Gerstmayr. A Generalized Component Mode Synthesis Approach for Flexible Multibody Systems with a Constant Mass Matrix. *Journal of Computational and Nonlinear Dynamics*, Vol. 8(1), 2012.
30. K. Nachbagauer, P. Gruber, J. Gerstmayr. Structural and Continuum Mechanics Approaches for a 3D Shear Deformable ANCF Beam Finite Element: Application to static and linearized dynamic examples, *Journal of Computational and Nonlinear Dynamics*, Vol. 8(2), 2012.
31. J. Gerstmayr, H. Sugiyama, A. Mikkola. Review on the Absolute Nodal Coordinate Formulation for Large Deformation Analysis of Multibody Systems, *Journal of Computational and Nonlinear Dynamics*, Vol. 8(3), pp. 031016 – 031016-12, 2013, DOI:10.1115/1.4023487.
32. M. Schörghener, P.G. Gruber, J. Gerstmayr, Interaction of flexible multibody systems with fluids analyzed by means of smoothed particle hydrodynamics, *Multibody System Dynamics*, 30, 53-76, 2013. DOI: 10.1007/s11044-013-9359-6
33. P.G. Gruber, K. Nachbagauer, Y. Vetyukov, J. Gerstmayr. A novel director-based Bernoulli-Euler beam finite element in absolute nodal coordinate formulation free of geometric singularities, *Mechanical Sciences*, Vol. 4, 279–289, 2013.
34. A. Pechstein, J. Gerstmayr. A Lagrange-Eulerian formulation of an axially moving beam based on the absolute nodal coordinate formulation, *Multibody System Dynamics*, Vol. 30 (3), 343 – 358, 2013.
35. G. Zenz, W. Berger, J. Gerstmayr, M. Nader, M. Krommer. Design of piezoelectric transducer arrays for passive and active modal control of thin plates, *Smart Structures and Systems*, Vol. 12(5), pp. 547-577, 2013.
36. K. Nachbagauer, J. Gerstmayr. Structural and Continuum Mechanics Approaches for a 3D Shear Deformable ANCF Beam Finite Element: Application to Buckling and Nonlinear Dynamic Examples, *Journal of Computational and Nonlinear Dynamics*, Vol. 9(1), pp. 011013-1 – 011013-8, 2013.
37. R. Eder, J. Gerstmayr. Special Genetic Identification Algorithm with smoothing in the frequency domain, *Advances in Engineering Software*, Vol. 70, pp. 113-122, 2014.
38. G. Zenz, J. Gerstmayr, K. Nachbagauer, M.-H. Shih, Y.-B. Yang. Identification of System Properties in a Square Frame Undergoing Large Deformations: Numerical and Experimental Investigations, *Int. Journal of Structural Stability and Dynamics*, Vol. 14(6), p. 1450017 (26 pages), 2014.
39. O.A. Bauchau, P. Betsch, A. Cardona, J. Gerstmayr, B. Jonker, P. Masarati, V. Sonneville. Validation of Flexible Multibody Dynamics Beam Formulations using Benchmark Problems, *Multibody System Dynamics*, 37(1):29-48, 2016.
40. S. Silber, G. Bramerdorfer, A. Dorninger, A. Fohler, J. Gerstmayr, W. Koppelstätter, D. Reischl, G. Weidenholzer, S. Weitzhofer. Coupled optimization in MagOpt. *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, Vol. 230, pp. 291-299, 2016.
41. P. Ziegler, A. Humer, A. Pechstein, J. Gerstmayr. Generalized Component Mode Synthesis for the Spatial Motion of Flexible Bodies with Large Rotations about One Axis, *ASME Journal of Computational and Nonlinear Dynamics*, Vol. 11(4), 041018, 10 pages, 2016.
42. Y. Vetyukov, P. Gruber, M. Krommer, J. Gerstmayr, G. Ilhom, G. Winter. Mixed Eulerian-Lagrangian description in materials processing: deformation of a metal sheet in a rolling mill, *International Journal for Numerical Methods in Engineering*, Vol. 109, pp. 1371–1390, 2017, <https://doi.org/10.1002/nme.5314>

43. J. Rahikainen, A. Mikkola, J. Sapanen, J. Gerstmayr. Combined semi-recursive formulation and lumped fluid method for monolithic simulation of multibody and hydraulic dynamics. *Multibody System Dynamics*, Vol. 44, pp. 293–311, 2018. <https://doi.org/10.1007/s11044-018-9631-x>
44. R. Winkler, J. Gerstmayr. A projection-based approach for the derivation of the floating frame of reference formulation for multibody systems, *Acta Mechanica*, Vol. 230, pp. 1–29, 2019. <https://doi.org/10.1007/s00707-018-2306-0>
45. M. Pieber, R. Neuraüter, J. Gerstmayr. Aktiv rekonfigurierbares Robotersystem zum Aufbau geschlossener Strukturen in der Ebene. In: *Forschung im Ingenieurwesen / engineering research* 83/2, S. 289 – 304, 2019. <https://doi.org/10.1007/s10010-019-00313-0>
46. A. Zwölfer, J. Gerstmayr. Preconditioning strategies for linear dependent generalized component modes in 3D flexible multibody dynamics. *Multibody System Dynamics*, Vol. 47(1), pp. 65 – 93, 2019. <https://doi.org/10.1007/s11044-019-09680-6>
47. B. Caillaud, R. Winkler, M. Oberguggenberger, M. Luger, J. Gerstmayr. Static model of a snowboard undergoing a carved turn: validation by full-scale test, *Sports Engineering* Vol. 22 (15), 2019. <https://doi.org/10.1007/s12283-019-0307-4>
48. A. Zwölfer, J. Gerstmayr. A concise nodal-based derivation of the floating frame of reference formulation for displacement-based solid finite elements, *Journal of Multibody System Dynamics*, Vol. 49(3), pp. 291 – 313, 2020. <https://doi.org/10.1007/s11044-019-09716-x>
49. S. Holzinger, J. Schöberl, J. Gerstmayr. The equations of motion for a rigid body using non-redundant unified local velocity coordinates. *Multibody System Dynamics*, Vol. 48, pp. 283 – 309, 2020. <https://doi.org/10.1007/s11044-019-09700-5>
50. F. Naets, T. Devos, A. Humer, J. Gerstmayr. A noninvasive system-level model order reduction scheme for flexible multibody simulation, *International Journal Numerical Methods in Engineering*, Vol. 121 (14), pp. 3083-3107, 2020. <https://doi.org/10.1002/nme.6348>
51. S. Holzinger, J. Gerstmayr. Time integration of rigid bodies modelled with three rotation parameters, *Multibody System Dynamics*, Vol. 53(5), 2021. <https://doi.org/10.1007/s11044-021-09778-w>
52. A. Zwölfer, J. Gerstmayr. The nodal-based floating frame of reference formulation with modal reduction. *Acta Mechanica*, Vol. 232, pp. 835–851 (2021). <https://doi.org/10.1007/s00707-020-02886-2>
53. M. Gerbl, J. Gerstmayr. Self-reconfiguration of shape-shifting modular robots with triangular structure, *Robotics and Autonomous Systems*, Vol. 147(7842):103930, 2021. <https://doi.org/10.1016/j.robot.2021.103930>
54. B. Caillaud, J. Gerstmayr. On the kinematics of a concave sidecut line deformed on a flat surface, *Acta Mechanica*, Vol. 232(12), 2021. <https://doi.org/10.1007/s00707-021-03080-8>
55. M. Pieber, K. Ntarladima, R. Winkler, J. Gerstmayr. A Hybrid ALE Formulation for the Investigation of the Stability of Pipes Conveying Fluid and Axially Moving Beams, *ASME Journal of Computational and Nonlinear Dynamics*, 2022. <https://doi:10.1115/1.4053505>
56. S. Holzinger, M. Schieferle, C. Gutmann, M. Hofer, J. Gerstmayr. Modeling and Parameter Identification for a Flexible Rotor with Impacts. *Journal of Computational and Nonlinear Dynamics*, 2022. <https://doi.org/10.1115/1.4053560>
57. B. Caillaud, J. Gerstmayr. Shape optimization of a snowboard sidecut geometry. *Sports Engineering* 25 (19), 2022. <https://doi.org/10.1007/s12283-022-00380-7>
58. R. Neuraüter, J. Gerstmayr. A novel motion reconstruction method for inertial sensors with constraints, *Multibody System Dynamics*, 2022. <https://doi.org/10.1007/s11044-022-09863-8>
59. A. Zwölfer, J. Gerstmayr. Absolute Coordinate Formulation and Generalized Component Mode Synthesis with Rigid Body Coordinates, *Multibody System Dynamics*, 2023, available online. <https://doi.org/10.1007/s11044-023-09878-9>

60. M. Gerbl, J. Gerstmayr, Self-reconfiguration of PARTS: a parallel reconfiguration algorithm based on surface flow, *Robotics and Autonomous Systems*, Vol. 164(3–4):104417, 2023. <https://doi.org/10.1016/j.robot.2023.104417>
61. A. Zwölfer, J. Gerstmayr. State of the art and unification of corotational formulations for flexible multibody system dynamics formulations, *Journal of Structural Dynamics*, Vol. 2, pp. 51-81, 2023. <https://doi.org/10.25518/2684-6500.145>
62. M. Pieber, J. Gerstmayr. Six-bar Linkages with Compliant Mechanisms for Programmable Mechanical Structures, *ASME Journal of Mechanisms and Robotics*, Vol 16(6): 061008, 2024. <https://doi.org/10.1115/1.4063168>
63. J. Gerstmayr, Exudyn – A C++ based Python package for flexible multibody systems, *Multibody System Dynamics*, Vol. 60, pp. 533–561, 2024. <https://doi.org/10.1007/s11044-023-09937-1>
64. K. Ntarladima, M. Pieber, J. Gerstmayr, A model for contact and friction between beams under large deformation and sheaves, *Nonlinear Dynamics*, Vol. 111, pp. 20643-20660, 2023. <https://doi.org/10.1007/s11071-023-08973-y>
65. R. Neurauter, S. Holzinger, M. Neuhauser, J.-T. Fischer, J. Gerstmayr. Motion reconstruction of fast-rotating rigid bodies. *ASME Journal of Computational and Nonlinear Dynamics*, 2023. <https://doi.org/10.1115/1.4063952>
66. P. Manzl, O. Rogov, J. Gerstmayr, A. Mikkola, G. Orzechowski. Reliability Evaluation of Reinforcement Learning Methods for Mechanical Systems with Increasing Complexity. *Multibody System Dynamics*, 2024. <https://doi.org/10.1007/s11044-023-09960-2>
67. J. Gerstmayr, P. Manzl, M. Pieber, Multibody Models Generated from Natural Language, *Multibody System Dynamics*, 2024. <https://doi.org/10.1007/s11044-023-09962-0>
68. P. Manzl, M. Sereinig, J. Gerstmayr, A Mecanum wheel model based on orthotropic friction with experimental validation, *Mechanism and Machine Theory*, Vol. 193, 2024. <https://doi.org/10.1016/j.mechmachtheory.2023.105548>
69. S. Holzinger, M. Arnold, J. Gerstmayr. Evaluation and Implementation of Lie Group Integration Methods for Rigid Multibody Systems, *Multibody System Dynamics*, 2024. <https://doi.org/10.1007/s11044-024-09970-8>
70. M. Gerbl, M. Pieber, E. Ulrich, J. Gerstmayr. PARTS – A 2D self-reconfigurable programmable mechanical structure, *Robotics*. Vol. 13(5): 77, 2024. <https://doi.org/10.3390/robotics13050077>
71. M. Sereinig, P. Manzl, and J. Gerstmayr. Task Dependent Comfort Zone, a Base Placement Strategy for Autonomous Mobile Manipulators using Manipulability Measures, *Robotics*, Vol. 13(8), 2024. <https://doi.org/10.3390/robotics13080122>
72. Z. Zhang, J. Gerstmayr, W. Zhang. Application of laminate theory to plate elements based on absolute nodal coordinate formulation, *Journal of computational and nonlinear dynamics*, available online, 2024. <https://doi.org/10.1115/1.4066328>
73. P. Manzl, A. Humer, Q. Khadim, J. Gerstmayr. SLIDE: A machine-learning based method for forced dynamic response estimation of multibody systems. *Mechanics Based Design Of Structures And Machines* (submitted). arXiv preprint: <https://doi.org/10.48550/arXiv.2409.18272>

Book-Chapters, Reports

74. J. Gerstmayr. Computational methods for elasto-plastic multibody systems, Chapter 7 of: *Selected Topics in Structronic and Mechatronic Systems*, A.K. Belyaev and A. Guran, eds., Series on Stability, Vibration and Control of Systems, Series B - Vol. 3, World Scientific New York, pp. 269 – 319, 2003 (book-chapter).

75. J. Gerstmayr, H. Irschik, M. Dibold. Computational dynamics of an elasto-plastic structural element with rigid-body degrees-of-freedom, Chapter 6 of: *Advanced Dynamics and Control of Structures and Machines*, H. Irschik, K. Schlacher, eds, CISM-Series Vol. 444, Springer-Verlag Wien New York, pp. 65 – 77, 2004 (book-chapter).
76. C. Zehetner, J. Gerstmayr. Compensation of flexible vibrations in a two-link robot by piezoelectric actuation, Chapter 22 of *Mechanics and Model-Based Control of Smart Materials and Structures* (Hans Irschik, Michael Krommer, Kazumi Watanabe, Toshio Furukawa, eds.), Springer Wien New York, 2009.
77. M. Dibold, J. Gerstmayr: Comparison of Planar Structural Elements for Multibody Systems with Large Deformations, chapter in *Multibody Dynamics: Computational Methods and Applications*, Vol. 23, W. Blajer, K. Arczewski, J. Frączek, and M. Wojtyra (eds.), Springer, pp. 87 – 105, 2010.
78. K. Nachbagauer, C. Zehetner, J. Gerstmayr. Nonlinear finite element modelling of moving beam vibrations controlled by distributed actuators, Book chapter in: *Advanced Dynamics and Model-Based Control of Structures and Machines*, pp. 167-174, Springer-Verlag/Wien, 2011.
79. K. Nachbagauer, P. Gruber, J. Gerstmayr. A 3D Shear Deformable Finite Element Based on the Absolute Nodal Coordinate Formulation, in *J.C. Samin, P. Fiset: Multibody Dynamics - Computational Methods and Applications*, Vol. 28, Springer Verlag, 77-96, 2012, ISBN: 978-94-007-5403-4.
80. Rafael Ludwig, Johannes Gerstmayr, Automatic Parameter Identification for Mechatronic Systems, Book Chapter in: *Proceedings of the Multibody System Dynamics, Robotics and Control Workshop, 2013, Linz, Austria*, Springer, Heidelberg.
81. Schörghener, M., Gruber, P.G., Nachbagauer, K., Gerstmayr, J.: Soft structures with fluid interaction. In: *Report of the German Association for Computational Mechanics (GACM)*, No. 8, 2013.
82. H. Irschik, A. Humer, J. Gerstmayr. A Non-linear Theory for Piezoelectric Beams, Chapter 21 in Book: *Mechanics and Model-Based Control of Advanced Engineering Systems*, Springer Wien, 2014.
83. J. Gerstmayr, A. Humer, K. Nachbagauer, P. Gruber. „The Absolute Nodal Coordinate Formulation“, Chapter 4 in: *Structure-preserving Integrators in Nonlinear Structural Dynamics and Flexible Multibody Dynamics* (CISM book), Springer, pp. 159 – 200, 2016.
84. A. Zwölfer, J. Gerstmayr. Co-rotational formulations for 3D flexible multibody systems: A nodal-based approach, *Advanced Structured Materials*, 2019. https://doi.org/10.1007/978-3-030-21251-3_14

Papers in Conference Proceedings

85. A.K. Belyaev, E. Blumenschein, S. Blumenschein, J. Gerstmayr. Vibrational conductivity approach to vibration in a power plant subjected to aircraft impact, In: *Transactions of the 14th Int. Conf. On Struct. Mech. In Reactor Techn. (SMIRT 14)*, Lyon, France, pp. 331 – 338, 1997.
86. H.J. Holl, H. Irschik, U. Pichler, J. Gerstmayr. Maysel's formula in nonlinear structural mechanics. In: *Thermal Stresses 99*, J.J. Skrzypek and R.B. Hetnarski, eds., pp. 119 – 122, Society of Thermal Stresses, 1999.
87. J. Gerstmayr, H. Irschik. Dynamic analysis of machine elements exposed to plasticity and damage, In: *Symposium on Trends in the Application of Mathematics to Mechanics*, P.E. O'Donoghue, J.N. Flavin, eds., Elsevier Paris, pp. 86 – 92, 2000.

88. J. Gerstmayr. Computational methods for control of elasto-plastic structures with rigid-body degrees of freedom. In: *Proceedings of the summerschool on actual problems in mechanics (APM'2000)*, St. Petersburg, Russia, 2001, pp. 164 – 176.
89. J. Gerstmayr, H. Irschik. The elasto-plastic pendulum with geometric stiffening, *Zeitschrift für Angewandte Mathematik und Mechanik*, Vol. 81, Supplement 2, pp. 337 – 338, 2001.
90. J. Gerstmayr, H. Irschik. Control of an elasto-plastic pendulum, In: *Proceedings of DETC'01 ASME Design Engineering Technical Conferences*, Pittsburg, Pennsylvania, 2001 (CDROM). Printed version: American Society of Mechanical Engineers, Paper No. VIB-21600.
91. H. Irschik, J. Gerstmayr. Computational methods for elasto-plastic multibody dynamic systems, In: *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, July 7-12, 2002, Vienna, Austria, Editors: Mang, H.A.; Rammerstorfer, F.G.; Eberhardsteiner, J., Publisher: Vienna University of Technology, Austria, ISBN 3-9501554-0-6, <http://wccm.tuwien.ac.at>
92. J. Gerstmayr, J. Schöberl. A 3D finite element approach to flexible multibody systems, In: *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, July 7-12, 2002, Vienna, Austria, Editors: Mang, H.A.; Rammerstorfer, F.G.; Eberhardsteiner, J., Publisher: Vienna University of Technology, Austria, ISBN 3-9501554-0-6, <http://wccm.tuwien.ac.at>
93. J. Gerstmayr. Comparison of the absolute nodal coordinate and the floating frame of reference formulation by means of a simplified strain formulation, In: *Proceedings of DETC'03 ASME Design Engineering Technical Conferences*, Chicago, Illinois, 2003 (CDROM). Printed version: American Society of Mechanical Engineers, Paper No. VIB-48306.
94. M. Dibold, J. Gerstmayr, H. Irschik. Biaxial vibrations of an elasto-plastic beam with a prescribed rigid-body rotation, In: *Proceedings of DETC'03 ASME Design Engineering Technical Conferences*, Chicago, Illinois, 2003 (CDROM). Printed version: American Society of Mechanical Engineers, Paper No 48324.
95. J. Gerstmayr. The absolute nodal coordinate formulation with elasto-plastic deformations, In: *Proceedings of the Multibody Dynamics 2003 conference*, J.A.C. Ambrósio (Ed.), IDMEC/IST, Lisbon, Portugal, 2003 (CDROM).
96. J. Gerstmayr, J. Schöberl. A 3D Finite Element Solver for Multibody Systems Based on Implicit Runge-Kutta Schemes, In: *PAMM*, Vol. 3, No. 1, 2003, pp. 154 – 155.
97. M. Dibold, J. Gerstmayr, H. Irschik. Elasto-plastic deformation in the spherical pendulum, In: *PAMM*, Vol. 3, No. 1, 2003, pp. 150 – 151.
98. Yu. Vetyukov, J. Gerstmayr, H. Irschik. Fixed-point type iterations in numerical simulations for static and dynamic elasto-plasticity, In: *PAMM*, Vol. 3, No. 1, 2003, pp. 318 – 319.
99. Yu. Vetyukov, J. Gerstmayr, H. Irschik. Modeling of the complex motion of the elasto-plastic plate rotating around a hinge in its own plane, In: *Proceedings of the XXXI Summer School on Advanced Problems in Mechanics (APM 2003)*, St. Petersburg: IPME RAS, pp. 400 – 405, 2004.
100. J. Gerstmayr. The absolute coordinate formulation with reduced strain for the efficient simulation of flexible multibody systems with nonlinear constraints, In: *Proceedings of the ECCOMAS 2004*, P. Neittaanmäki, T. Rossi, S. Korotov, E. Oñate, J. Périaux, and D. Knörzer (eds.), Jyväskylä, Helsinki, 2004 (CDROM).
101. J. Gerstmayr, H. Irschik. The absolute coordinate formulation with reduced strain and stiffening, Extended summary at the XXI ICTAM conference, Warsaw, Poland, 2004.
102. M. Dibold, J. Gerstmayr, R. Stadlmayr, H. Irschik, K. Schlacher, Dynamics of multibody systems including hydraulic actuators and feedback control. In: *Proceedings of the 3rd European Conference on Structural Control (3ECSC)*, Vienna, Austria, Schriftenreihe der Technischen Universität Wien, pp. S1-39 – S1-42, 2004.
103. J. Gerstmayr, M. Stangl, H. Irschik. Optimal control parameters of flexible multibody systems with contact. In: *Proceedings of 3rd European Conference on Structural Control ECSC*

(3ECSC), Vienna, Austria, Schriftenreihe der Technischen Universität Wien, pp. S1-143 – S1-146, 2004.

104. J. Gerstmayr, M. Stangl. High-Order Implicit Runge-Kutta Methods for Discontinuous Multibody Systems, In: *Proceedings of the XXXII Summer School APM' 2004, June 24- July 1*, Editor D.A. Indeitsev, pp. 162-169, St. Petersburg, Russia, 2004.
105. J. Gerstmayr, A.A. Shabana. Analysis of higher and lower order elements for the absolute nodal coordinate formulation, In: *Proceedings of the ASME 5th International Conference on Multibody Systems, Nonlinear Dynamics, and Control*, paper number DETC2005-84827, ASME, New York 2005 (CDROM).
106. J. Gerstmayr, A.A. Shabana. Efficient integration of the elastic forces and thin three-dimensional beam elements in the absolute nodal coordinate formulation, *Multibody Dynamics 2005 - ECCOMAS Thematic Conference*, Goicolea, Cuadrado, García Orden (eds.), Madrid, Spain, 2005 (CDROM).
107. H. Sugiyama, J. Gerstmayr, A. A. Shabana. Cross section deformation in the absolute nodal coordinate formulation, In: *Proceedings of the ASME 5th International Conference on Multibody Systems, Nonlinear Dynamics, and Control*, paper number DETC2005-84524, ASME, New York, 2005 (CDROM).
108. J. Gerstmayr, M.K. Matikainen. Analysis of stress and strain in the absolute nodal coordinate formulation with nonlinear material behavior, *III European Conference on Computational Mechanics – Solids, Structures and Coupled Problems in Engineering*, C.A. Mota Soares et al. (eds.), Lisbon, Portugal 2006 (CDROM).
109. M. Dibold, J. Gerstmayr. Simulation of an elastic multibody system with hydraulics and control, In: *Proceedings of the 77th Annual Meeting of GAMM 2006*, Berlin, PAMM Vol.6, No. I, pp. 89 – 90, 2006.
110. J. Gerstmayr. Component mode synthesis for multibody systems with absolute coordinates, In: *Proceedings of the 12th IFToMM World Congress*, Besançon, June 18-21, 2007, Paper Number 817 (CD-ROM).
111. J. Gerstmayr and W. Witteveen. Reduction methods for large-scale multibody systems, In: *Proceedings of the Multibody Dynamics 2007, ECCOMAS Thematic Conference*, C.L. Bottasso, P. Masarati, L. Trainelli (eds.), Milano, Italy, 25–28 June 2007 (CD-ROM).
112. A.L. Schwab, J. Gerstmayr, and J. P. Meijaard. Comparison of Three-Dimensional Flexible Thin Plate Elements for Multibody Dynamic Analysis: Finite Element Formulation and Absolute Nodal Coordinate Formulation, In: *Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2007*, Las Vegas, Nevada, USA, 2007. Paper No. DETC2007-34754.
113. M. Dibold, J. Gerstmayr, H. Irschik. On the accuracy and computational costs of the absolute nodal coordinate and the floating frame of reference formulation in deformable multibody systems, In: *Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2007*, Las Vegas, Nevada, USA, 2007. Paper No. DETC2007-34756.
114. M. Stangl, J. Gerstmayr, H. Irschik. A large deformation finite element for pipes conveying fluid based on the absolute nodal coordinate formulation, In: *Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2007*, Las Vegas, Nevada, USA, 2007. Paper No. DETC2007-34771.
115. R. Ludwig, J. Gerstmayr, Christian Augdopler and Christoph Mittermayer. Realistic Robot Simulation with Flexible Components, In: *Proceedings of the Ciras 2008*, Fifth International Conference on Computational Intelligence, Robotics and Autonomous Systems, Linz, Austria, 19–21 June 2008. Paper No. 41 (CD-ROM).

116. J. Gerstmayr, H. Irschik. On the appropriateness of the absolute nodal coordinate formulation for nonlinear problems of rods, In: *Proceedings of the 4th European Conference on Structural Control (4ECSC)*, 8-12 September 2008, St. Petersburg, pp. 268-275, Paper ID 243.
117. M. Dibold, J. Gerstmayr, H. Irschik. Two approaches for the modelling and simulation of controlled flexible multibody systems, In: *Proceedings of the 4th European Conference on Structural Control (4ECSC)*, 8-12 September 2008, St. Petersburg, pp. 183-190, Paper ID 142.
118. R. Ludwig, J. Gerstmayr, C. Augdopler and C. Mittermayer. Flexible Robot with Clearance, In: *Proceedings of the 4th European Conference on Structural Control (4ECSC)*, 8-12 September 2008, St. Petersburg, pp. 511-518, Paper ID 221.
119. J. Gerstmayr, H. Irschik. Application of multibody dynamics for the analysis of historical monuments under earthquakes, In: *Proceedings of the Eleventh East Asia-Pacific Conference on Structural Engineering & Construction (EASEC-11)*, November 19-21, 2008, Taipei, Taiwan.
120. J. Gerstmayr, H. Irschik. On the correct representation of bending and axial deformation in the absolute nodal coordinate formulation for large displacements and finite deformations of beams, In: *Proceedings of the Taiwan-Austria Joint Workshop on Computational Mechanics of Materials and Structures*, November 16-17, 2008, Taipei, Taiwan.
121. C. Zehetner, J. Gerstmayr. Control of flexible vibrations in a two-link robot by piezoelectric actuation, In: *Proceedings of the Mathmod 09 Vienna*, I. Troch, F. Breitenecker, eds., 2009.
122. H. Irschik, J. Gerstmayr. A hyperelastic Reissner-type model for non-linear shear deformable beams, In: *Proceedings of the Mathmod 09 Vienna*, I. Troch, F. Breitenecker, eds., 2009.
123. J. Gerstmayr. A corotational approach for 3D absolute nodal coordinate elements, In: *Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2009*, San Diego, USA, 2009. Paper No. DETC2009-87476.
124. J. Gerstmayr, HOTINT – A C++ Environment for the simulation of multibody dynamics systems and finite elements, In: *Proceedings of the Multibody Dynamics 2009 Eccomas Thematic Conference*, K. Arczewski, J. Frączek, M. Wojtyra (eds.), 29 June – 2 July 2009, pp. 1-20.
125. M. Dibold, J. Gerstmayr. Verification of structural elements in large deformation problems, In: *Proceedings of the Multibody Dynamics 2009 Eccomas Thematic Conference*, 29 June – 2 July 2009, pp. 1-16.
126. L.G. Aigner, J. Gerstmayr, H. Irschik, A. Sinwel. A constitutive modeling approach for homogenized contact and friction behavior in thin-sheet packages. In: *Proceedings of the 7th Euromech Solid Mechanics Conference*, J. Ambrosio et al. (eds.), Lisbon, Portugal, September 2009.
127. L.G. Vorhauer and J. Gerstmayr. Mechanically homogenized material model for a pack of sheets. In: *Proceedings in Applied Mathematics and Mechanics (PAMM)*, Vol.9 (2009).
128. A. Sinwel, J. Gerstmayr. Modelling an axially moving beam using the absolute nodal coordinate formulation, *Proceedings of the seventh International Conference on Engineering Computational Technology*, B.H.V. Topping, J.M. Adam, F.J. Pallarés, R. Bru and M.L. Romero (eds.), Civil-Comp Press, Stirlingshire, 2010.
129. L.G. Aigner, A.S. Sinwel, J. Gerstmayr, H. Irschik. Stability of thin sheet layered structures with frictional contact. In: *Proceedings of the IV European Conference on Computational Mechanics (Solids, Structures and Coupled Problems in Engineering)*, Paris, France, 2010.
130. K. Nachbagauer, J. Gerstmayr, A. Sinwel, H. Irschik. A Linear and Quadratic Planar Finite Element Based on the Absolute Nodal Coordinate Formulation, In: *Proceedings of the 1st Joint International Conference on Multibody System Dynamics*, Lappeenranta, Finland, 2010.

131. J. Gerstmayr, A. Sinwel. Some Applications of the Absolute Nodal Coordinate Formulation in the case of Axially Moving Beams and Piezoelectric Actuation, In: *Proceedings of The 1st Joint International Conference on Multibody System Dynamics*, Lappeenranta, Finland, 2010.
132. J. Gerstmayr, M. Stangl, M. Nader, K. Nachbagauer. "Control of Vibrations of Moving Structures by Active Tendons", 5th World Conference on Structural Control and Monitoring, Tokio, Japan, 2010, paper-ID: 5WCSCM-ID10095.
133. J. Gerstmayr, A. Pechstein, L.G. Aigner. A three-dimensional continuous material model for a pile of thin sheets and frictional contact, In: *Proceedings of the Tenth International Conference on Computational Structures Technology*, Valencia, Spain, 2010.
134. H. Irschik, J. Gerstmayr, A continuum mechanics approach for geometrically nonlinear shear-deformable and smart beams, In: *Proceedings of the Tenth International Conference on Computational Structures Technology*, Valencia, Spain, 2010.
135. C. Zehetner, J. Gerstmayr, A Continuum Mechanics Approach for Smart Beams: Applications, In: *Proceedings of the Tenth International Conference on Computational Structures Technology*, Valencia, Spain, 2010.
136. A. Pechstein, D. Reischl, J. Gerstmayr. The applicability of the floating-frame based component mode synthesis to high-speed rotors, In: *Proceedings of the ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011*, Washington, DC, USA, 2011. Paper No. DETC2011/MSNDC-47800.
137. J. Gerstmayr, A. Pechstein. A generalized component mode synthesis approach for multibody system dynamics leading to constant mass and stiffness matrices, In: *Proceedings of the ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011*, Washington, DC, USA, 2011. Paper No. DETC2011/MSNDC-47826.
138. K. Nachbagauer, P. Gruber, Y. Vetyukov, J. Gerstmayr. A spatial thin beam finite element based on the absolute nodal coordinate formulation without singularities, In: *Proceedings of the ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011*, Washington, DC, USA, 2011. Paper No. DETC2011/MSNDC-47732.
139. A.S. Pechstein, D. Reischl, J. Gerstmayr. A Generalized Component Mode Synthesis Approach leading to constant mass and stiffness matrices, In: *Proceedings of the MULTIBODY DYNAMICS 2011*, ECCOMAS Thematic Conference, Brussels, Belgium, 2011.
140. K. Nachbagauer, P. Gruber, A. S. Pechstein, J. Gerstmayr. A 3D Shear Deformable Finite Element Based on the Absolute Nodal Coordinate Formulation, In: *Proceedings of MULTIBODY DYNAMICS 2011 ECCOMAS Thematic Conference*, Brussels, Belgium, 2011.
141. Rafael Ludwig, Johannes Gerstmayr. Automatic parameter identification for generic robot models, ECCOMAS Thematic Conference on Multibody Dynamics (ECCOMAS), In: *Proceedings of MULTIBODY DYNAMICS 2011 ECCOMAS Thematic Conference*, Brussels, Belgium, 2011.
142. K. Nachbagauer, J. Gerstmayr, A. S. Pechstein, H. Irschik. A spatial shear deformable beam finite element based on the absolute nodal coordinate formulation, In: *Proceedings of the International Association of Applied Mathematics and Mechanics PAMM*, 11, pp. 59-60, Wiley-Verlag, DOI 10.1002/pamm.201110021, 2011.
143. C. Zehetner, G. Zenz, J. Gerstmayr. Piezoelectric control of flexible vibrations in rotating beams: An experimental study, In: *Proceedings of the International Association of Applied Mathematics and Mechanics PAMM*, 11, pp. 77-78, Wiley-Verlag, DOI 10.1002/pamm.201110030, 2011.

144. Zenz, Georg; Berger, Wolfgang; Nader Manfred, Gerstmayr Johannes: Active and passive piezoelectric vibration and noise control of plates, In: *Proceedings of the Adaptronic Congress*, Sept. 7.-8., Darmstadt, Germany, pp. 274-280, 2011.
145. G. Zenz, C. Zehetner, J. Gerstmayr, M. Krommer. Active and passive piezoelectric control of flexible vibrations: An experimental study, In: *Proceedings of the 5th European Conference on Structural Control*, June 18.-20., Genua, Italy, 2012.
146. G. Zenz, C. Zehetner, J. Gerstmayr. On the Stability of Beams with Piezoelectric Transducers, In: *Proceedings of the 5th European Conference on Structural Control*, June 18.-20., Genua, Italy, 2012.
147. Johannes Gerstmayr, Hiroyuki Sugiyama, Aki Mikkola. An Overview on the Developments of the Absolute Nodal Coordinate Formulation, In: *Proceedings of the 2nd Joint International Conference on Multibody System Dynamics*, Stuttgart, Germany, 2012.
148. Karin Nachbagauer, Johannes Gerstmayr. Nonlinear Dynamic Analysis of Three-Dimensional Shear Deformable ANCF Beam Finite Elements, In: *Proceedings of the 2nd Joint International Conference on Multibody System Dynamics*, Stuttgart, Germany, 2012.
149. Johannes Gerstmayr, Alexander Dorninger, Karin Nachbagauer. Modeling of Boundary Conditions and Joints with Finite Elements Based on the Absolute Nodal Coordinate Formulation, In: *Proceedings of the 2nd Joint International Conference on Multibody System Dynamics*, Stuttgart, Germany, 2012.
150. Alexander Humer, Daniel Reischl, Johannes Gerstmayr. Investigations on the Application of Energy-Momentum Schemes to Modally-reduced Multibody Systems, In: *Proceedings of the 2nd Joint International Conference on Multibody System Dynamics*, Stuttgart, Germany, 2012.
151. K. Nachbagauer, J. Gerstmayr. A 3D Shear Deformable Beam Element based on the Absolute Nodal Coordinate Formulation applied to Classical Buckling Problems, In: *Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, Vienna, Austria, September 10-14, 2012.
152. D. Reischl, R. Ludwig, J. Gerstmayr. Automated Identification of a Nonlinear Viscoelastic Model for Injection Molding Machines, 13th Mechatronics Forum International Conference, Linz, Austria, September 2012.
153. G. Zenz, C. Zehetner, J. Gerstmayr, A. Humer. Enhancement of the Stability of Beams with Piezoelectric Transducers. 13th Mechatronics Forum International Conference, Linz, Austria, September 2012.
154. A. Dorninger, E. Karer, J. Gerstmayr. Nonlinear behavior of thin-layered structures under contact and friction, In: *Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, Vienna, Austria, September 10-14, 2012.
155. M. Schörghener, P. G. Gruber, and J. Gerstmayr, Interaction of flexible multibody dynamics with fluids by means of smoothed particle hydrodynamics. In: *Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, Vienna, 2012.
156. M. Saxinger, P. Gruber, J. Gerstmayr. HOTINT - a Free Flexible Multibody System Simulator for Robotics Applications, *Proceedings of the Austrian Robotics Workshop*, Vienna, 2013.
157. P. Ziegler, A. Humer, A. Pechstein, J. Gerstmayr. Generalized component mode synthesis for the spatial motion of flexible bodies with large rotations about one axis. In: *Proceedings of the ASME 2013 IDETC&CIE Conference, Portland, Oregon, USA, 2013*.
158. A. Humer, J. Gerstmayr. Energy-momentum conserving time integration of modally reduced flexible multibody systems. In: *Proceedings of the ASME 2013 IDETC&CIE Conference, Portland, Oregon, USA, 2013*.
159. J. Gerstmayr, A. Dorninger, R. Eder, P. Gruber, D. Reischl, M. Saxinger, M. Schörghener, A. Humer, K. Nachbagauer, A. Pechstein, Y. Vetyukov. HOTINT - a script language based

- framework for the simulation of multibody dynamics systems. *In: Proceedings of the ASME 2013 IDETC&CIE Conference, Portland, Oregon, USA, 2013.*
160. O.A. Bauchau, S. Han, A. Mikkola, M.K. Matikainen, J. Gerstmayr. Experimental validation of flexible multibody dynamics beam formulations. *In: Proceedings of the ASME 2013 IDETC&CIE Conference, Portland, Oregon, USA, 2013.*
 161. M. Schörgenhumer, P. Seil, S. Pirker, J. Gerstmayr. Fluid-structure interaction with flexible multibody dynamics and smoothed particle hydrodynamics, IIIrd International Conference on Particle-based Methods, *PARTICLES 2013*, Stuttgart, 2013.
 162. A. Humer, F. Naets, W. Desmet, J. Gerstmayr. A generalized component mode synthesis approach for global modal parameterization in flexible multibody dynamics, *The 3rd Joint International Conference on Multibody System Dynamics*, Busan, Korea, 2014.
 163. O.A. Bauchau, G. Wu, P. Betsch, A. Cardona, J. Gerstmayr, B. Jonker, P. Masarati, V. Sonneville. Validation of Flexible Multibody Dynamics Beam Formulations using Benchmark Problems, *The 3rd Joint International Conference on Multibody System Dynamics*, Busan, Korea, 2014.
 164. Reischl D., Dorninger A., Fohler A., Gerstmayr J., Koppelstätter W., Silber S.: Coupled Mechanical and Electromagnetic Optimization of High Speed Rotors, in: ISMB14, 14th International Symposium on Magnetic Bearings, Linz, Austria, August 11-14, 2014, 2014.
 165. M. Schörgenhumer, A. Humer and J. Gerstmayr. Efficient fluid-structure interaction based on modally reduced multibody systems and smoothed particle hydrodynamics. *Proceedings of the WCCM XI, ECCM V and ECFD VI*, Barcelona, Spain, 2014.
 166. O.A. Bauchau, P. Betsch, A. Cardona, J. Gerstmayr, B. Jonker, P. Masarati, V. Sonneville. Validation of Flexible Multibody Dynamics Beam Formulations using Benchmark Problems, *Proceedings of: Ecomas Multibody System Dynamics*, Barcelona, Spain, 2015.
 167. M. Schörgenhumer, A. Humer, J. Gerstmayr. Smoothed Particle Hydrodynamics and Model Order Reduction for Efficient Modeling of Fluid-Structure Interaction, IFAC-PapersOnLine 48-1, pp. 352-353, 2015.
 168. R. Winkler, H. Haller, D. Plakomytis, J. Gerstmayr. Interlaminar stress recovery for arbitrarily curved shells, *PAMM 15(1)*, pp. 239-240, 2015. DOI:10.1002/pamm.201510110
 169. R. Winkler, D. Plakomytis, J. Gerstmayr. A Null Space Projection Approach for Modally Reduced Flexible Multibody Systems, *Proceedings of the ASME 2016 IDETC&CIE Conference*, Charlotte, N.C., 2016.
 170. M. Pieber, J. Gerstmayr. An Adaptive Robot with Tetrahedral Cells, *Proceedings of the 4th Joint International Conference on Multibody System Dynamics*, Montréal, Canada, 2016.
 171. J. Gerstmayr, P. Gruber, A. Humer. Comparison of Fully Parameterized and Gradient Deficient Elements in the Absolute Nodal Coordinate Formulation. *Proceedings of the ASME 2017 IDETC&CIE Conference, Cleveland, USA, 2017.*
 172. M. Pieber, R. Neuraüter, J. Gerstmayr. An adaptive robot for building in-plane programmable structures. *Proceedings of the 4th IFToMM D-A-CH Conference 2018*, Lausanne, Switzerland, 2018.
 173. S. Holzinger, J. Gerstmayr, and J. Schöberl. A rigid body formulation with non-redundant unified local velocity coordinates, In: *Proceedings of the 5th Joint International Conference on Multibody System Dynamics (IMSD)*, Lisboa, Portugal, 2018.
 174. A. Zwölfer, J. Gerstmayr. Selection of generalized component modes for modally reduced flexible multibody systems, In: *Proceedings of the 5th Joint International Conference on Multibody System Dynamics (IMSD)*, Lisbon, Portugal, 2018.
 175. M. Pieber, R. Neuraüter, J. Gerstmayr. An adaptive robot for building in-plane programmable structures, *Proceedings of the 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Madrid, Spain, 2018.

176. S. Holzinger, J. Gerstmayr. A formulation for the dynamic analysis of multibody systems using non-redundant unified local velocity coordinates. PAMM, Vol.19(1), 2019.
<https://doi.org/10.1002/pamm.201900186>
177. Gerbl, Michael; Pieber, Michael; Gerstmayr, Johannes. Reconfiguration of Modular Robots with Triangular Structure. Proceedings of the 5th IFToMM D-A-CH Conference 2019, Aachen, Germany, 2019. <https://doi.org/10.17185/dupublico/48193>
178. Pieber, Michael; Gerstmayr, Johannes (2019). An adaptive structure with a metamorphic robotic system. Proceedings of the 9th ECCOMAS Thematic Conference on Smart Structures and Materials SMART 2019, Paris, France, 2019.
179. M. Gerbl, J. Gerstmayr. Selbstrekonfiguration adaptiver Roboter auf Grundlage von erweiterten Binärbäumen. Proceedings of the 6th IFToMM D-A-CH Conference 2020, Lienz, Austria, 2020. <https://doi.org/10.17185/dupublico/71180>
180. M. Sereinig, P. Manzl, J. Gerstmayr. Komfortzone mobiler Manipulatoren. Proceedings of the 6th IFToMM D-A-CH Conference 2020, Lienz, Austria, 2020.
<https://doi.org/10.17185/dupublico/71180>
181. M. Pieber, J. Gerstmayr. Six-bar linkages with compliant mechanisms for an adaptive robot. Proceedings of the ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE2020, St. Louis, MO, USA, 2020. <https://doi.org/10.1115/DETC2020-22546>
182. S. Holzinger, J. Gerstmayr. Explicit time integration of multibody systems modelled with three rotation parameters. Proceedings of the ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE2020, St. Louis, MO, USA, 2020. <https://doi.org/10.1115/DETC2020-22261>
183. A. Zwölfer, J. Gerstmayr. Consistent and inertia-shape-integral-free invariants of the floating frame of reference formulation. Proceedings of the ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE2020, St. Louis, MO, USA, 2020. <https://doi.org/10.1115/DETC2020-22293>
184. M. Gerbl, J. Gerstmayr. Self-reconfiguration planning of adaptive modular robots with triangular structure based on extended binary trees, In: IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020.
<https://doi.org/10.1109/IROS45743.2020.9341300>
185. W. Ainhauser, J. Gerstmayr, A. Giusti. Multi-objective Trajectory Tracking Optimization for Robots with Elastic Joints. In: Zeghloul S., Laribi M.A., Sandoval J. (eds) Advances in Service and Industrial Robotics, RAAD 2021. Mechanisms and Machine Science, vol 102. Springer, Cham, 2021. https://doi.org/10.1007/978-3-030-75259-0_27
186. K. Ntarladima, M. Pieber, J. Gerstmayr. Investigation of the stability of axially moving beams with discrete masses. Proceedings of the ASME 2021 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE 2021, Online, 2021. <https://doi.org/10.1115/DETC2021-70302>
187. P. Manzl, J. Gerstmayr. An improved dynamic model of the Mecanum wheel for multibody simulations. Proceedings of the ASME 2021 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE 2021, Online, 2021. <https://doi.org/10.1115/DETC2021-70281>
188. S. Holzinger, M. Schieferle, J. Gerstmayr. Modelling and parameter identification for a flexible rotor with periodic impacts. Proceedings of the ASME 2021 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE 2021, Online, 2021. <https://doi.org/10.1115/DETC2021-71417>
189. R. Neurauter, P. Hergel, J. Gerstmayr. Evaluation of inertial measurement units for short time motion tracking. Proceedings of the ASME 2021 International Design Engineering

- Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE 2021, Online, 2021. <https://doi.org/10.1115/DETC2021-69604>
190. O. Bröls, E. Celledoni, J. Gerstmayr, S. Leyendecker. THREAD – Highly flexible structures for industrial applications, ECMI Annual Report 2021, 2022. <https://ecmiindmath.org/wp-content/uploads/2022/07/ecmiannrep2021.pdf>
191. M. Sereinig, P. Manzl, J. Gerstmayr, P. Hoffmann, R. Neureiter, M. Pieber. Omnidirectional Mobile Manipulator LeoBot for Industrial Environments, Developed for Research and Teaching, RoboCup 2022: Robot World Cup XXV, Springer International Publishing, 2022.
192. P. Manzl, M. Sereinig, J. Gerstmayr. Modellierung und experimentelle Validierung von Mecanumrädern. Proceedings of the 6th IFToMM D-A-CH Conference 2022, Online, 2022. <https://doi.org/10.17185/dupublico/75419>
193. J. Gerstmayr, Exudyn - A C++ based Python package for flexible multibody systems, Proceedings of The 6th Joint International Conference on Multibody System Dynamics and the 10th Asian Conference on Multibody System Dynamics, New Delhi, India, 2022. <http://imsdacmd2020.iitd.ac.in/index.html>
194. J. Kuß, A. Köhler, M. Neuhauser, J.-T. Fischer, R. Neuraüter, J. Gerstmayr, and F. Dressler. A Measurement System for Distributed UWB-based Ranging and Localization in Snow Avalanches. In Proceedings of the 29th Annual International Conference on Mobile Computing and Networking (ACM MobiCom '23). Association for Computing Machinery, New York, NY, USA, Article 123, 1–3, 2023. <https://doi.org/10.1145/3570361.3615730>
195. J. Kuß, A. Köhler, M. Neuhauser, J.-T. Fischer, R. Neuraüter, J. Gerstmayr, and F. Dressler, Distributed UWB-Based Ranging for Particle Tracking in Avalanches, 19th Wireless On-Demand Network Systems and Services Conference (WONS), Chamonix, France, 2024, pp. 125-132, <https://doi.org/10.23919/WONS60642.2024.10449522>
196. Q. Khadim, L. Pyrhönen, E. Kurvinen, J. Gerstmayr, A. Mikkola, G. Orzechowski. Real-Time State Estimation of Hydraulically-Driven Systems Based on Unscented Kalman Filter and Low-Fidelity Models, Proceedings of the ASME 2024 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference IDETC/CIE 2024, Washington, 2024. (DOI: not yet available)
197. S. Weyrer, P. Manzl, A.L. Schwab, J. Gerstmayr. Path Following and Stabilisation of a Bicycle Model using a Reinforcement Learning Approach. arXiv preprint, 2024. <https://doi.org/10.48550/arXiv.2407.17156>

Patents

198. J. Gerstmayr, M. Nader, W. Berger, AT A 475/2011, Patentanmeldung, "Vorrichtung und Verfahren zur Reduktion einer Schwingung einer insbesondere transparenten Platte", 4.4.2011, Austrian Center of Competence in Mechatronics GmbH. (AT erteilt, EP angemeldet)
199. J. Gerstmayr, W. Berger, AT A50287/2012, Patentanmeldung, "Verfahren zur Erzeugung einer haptischen Rückmeldung an einem flächigen Substrat", 19.7.2012, Linz Center of Mechatronics GmbH. (AT erteilt 12/2014, EP angemeldet)
200. J. Gerstmayr, P. Gruber, Y. Vetyukov, A. Baumgärtner, A. Lorenz, B. Weisshaar, „Modellierung von Metallband in einer Walzstraße“, Patentanmeldung (Europa), Prioritätstag 13.10.2014, Patent Nr. 15188683.5 -1702.
201. J. Gerstmayr, M. Pieber. „Modulares selbst rekonfigurierbares Robotersystem“, Universität Innsbruck, Patentanmeldung (Österreich), Prioritätstag 5.10.2015, Patent Nr. AT A50848/2015; eingetragen:15.12.2017; Ö-Patent Nr. 517802
202. B. Winkler, A. Plöckinger, J. Gerstmayr, M. Nader, C. Zehetner. „Elektromagnetisch betätigbares Gasventil sowie Verfahren zur Erhöhung der Dichtigkeit eines elektromagnetisch betätigbaren Gasventils“, Prioritätsdatum 25.3.2014, Robert Bosch GmbH, Patent Nr. WO2015144341 A1.
203. J. Gerstmayr and M. Pieber, “Modular, self-reconfigurable robot system”, Patentanmeldung PCT/EP2016/073703, 2016.