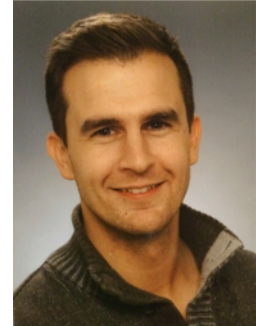


## Dr.-Ing. Christoph Meier

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Technical University of Munich (TUM)  
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### Professional Career

- Since 02/2018 **Lecturer, Deputy Head of Institute and Leader of AM Group**  
Institute for Computational Mechanics (Head: Prof. W.A. Wall), TUM,  
Scientific co-supervision of eight full-time Ph.D. students at TUM and  
one full-time Ph.D. student at MIT
- 08/2016 – 01/2018 **Postdoctoral Fellow**  
Mechanosynthesis Group (Head: Prof. A.J. Hart), Massachusetts  
Institute of Technology (MIT),  
Research project: “Advanced physics-based modeling of metal additive  
manufacturing processes across length scales”
- 07/2010 – 07/2016 **Research and Teaching Associate**  
Institute for Computational Mechanics, TUM

### Education and Work Experience

- 07/2016 **Ph.D. Mechanical Engineering (Dr.-Ing.), TUM**  
Doctoral thesis: “Geometrically exact finite element formulations for  
slender beams and their contact interaction”,  
Passed with high distinction (summa cum laude), GPA 1.0,  
Examination committee: Prof. Ewald Werner (chairman),  
Prof. Wolfgang A. Wall, Prof. Ignacio Romero (examiners)
- 07/2010 **Diploma Mechanical Engineering (Dipl.-Ing. Univ.), TUM**  
Diploma thesis: “Development of a finite element for non-linear beams  
based on the Frenet-Serret formulas”,  
Institute for Computational Mechanics, TUM,  
Passed with high distinction (summa cum laude), GPA 1.0,  
Ranked no. 1 out of 3580 examinees in the time period from summer  
term 2007 (begin of recordings) until winter term 2014/15
- 10/2007 **Intermediate Examination Mechanical Engineering, TUM**  
Passed with high distinction (summa cum laude), GPA 1.2,  
Ranked no. 1 out of 679 examinees within the academic year 2006/07
- 10/2005 – 07/2010 **Diploma Studies Mechanical Engineering, TUM**  
Specialization in “Materials Engineering” and  
“Fundamentals in Engineering Sciences”
- 07/2005 **High-School Diploma (Fachgeb. Hochschulreife), BOS Landshut**  
Passed with high distinction (summa cum laude), GPA 1.0
- 09/2003 – 07/2005 **Upper Vocational School (BOS) Landshut**  
Continuation education subsequent to apprenticeship

- 07/2003                   **Certificate of Apprenticeship (Gesellenbrief)**  
Passed with high distinction (summa cum laude), GPA 1.0
- 09/2000 – 07/2003   **Apprenticeship as tool mechanic at BMG AG, Dingolfing**  
Abbreviated apprenticeship due to excellent performance  
Focus on tooling and manufacturing technologies

## Honors and Awards

- 07/2017                   **Rudolf Schmidt-Burkhardt Memorial Prize of TUM**  
With an endowment of 10.000 Euro, this is the highest PhD award in the department of Mechanical Engineering of TUM
- 04/2017                   **Finalist of the ECCOMAS Award for the Best PhD Thesis of 2016 on Computational Methods in Applied Sciences and Engineering**  
The prize has been granted by the European Community on Computational Methods in Applied Sciences (ECCOMAS)
- 03/2017                   **Dr.-Klaus-Körper Prize for the Best PhD Thesis of 2016 in the Fields of Applied Mathematics and Mechanics**  
The prize has been granted by the international Association of Applied Mathematics and Mechanics (GAMM)
- 01/2017                   **GAMM Juniors Fellowship of the International Association of Applied Mathematics and Mechanics (GAMM)**  
Every year, only 10 candidates are selected based on an excellent Ph.D. thesis in the fields of Applied Mathematics or Mechanics
- 03/2016                   **Postdoctoral Fellowship (18 months) of the German Academic Exchange Service (DAAD)**
- 07/2015                   **Ranked as Best Diploma Graduate in Mechanical Engineering at TUM since recordings began in 2007**  
No. 1 out of 3580 examinees from summer term 07 - winter term 14/15
- 12/2012                   **Teaching Award of the Bavarian State Government**  
Only one assistant lecturer out of all Bavarian universities receives this annual award
- 05/2012                   **Golden Needle and Award for Excellence in Teaching of TUM**
- 07/2012                   **Teaching Award within the Annual Teaching Evaluation of the Faculty of Mechanical Engineering, TUM**
- 07/2011                   **Teaching Award within the Annual Teaching Evaluation of the Faculty of Mechanical Engineering, TUM**
- 07/2011                   **Award for the Best Final Degree in Mechanical Engineering in the Academic Year 2010/2011, TUM**
- 11/2010                   **CADFEM Diploma Thesis Award**  
Awarded for an excellent diploma thesis in engineering
- 10/2007 – 07/2010   **Full Scholarship of the German National Academic Foundation**  
Less than 1% of all students were granted this scholarship
- 07/2005                   **Award for the Best High School Diploma at the Upper Vocational School (BOS) Landshut in 2005**
- 03/2007 – 06/2010   **Member of the BMW Mentoring Program “Fastlane”**  
Less than 5% of BMW trainees / interns were granted this scholarship

## Research Interests

- Computational mechanics with focus on finite element methods (FEM), discrete element methods (DEM) and smoothed particle hydrodynamics (SPH)
- Physics-based modeling and simulation of metal additive manufacturing (AM): macroscale (part-scale thermo-solid-mechanics), mesoscale (melt pool thermo-hydrodynamics and powder spreading) and microscale (microstructure) modeling
- Computational solid, structural and contact mechanics
- Computational thermo-solid and (multi-phase) thermo-fluid mechanics
- Modeling of Solid-liquid and liquid-vapor phase transitions
- Material modeling
- Modeling of cohesive powders and granular materials
- Reduced-order modelling
- Geometrically exact beam theories
- Mechanical contact and intermolecular interactions between slender beams/fibers
- Coupling/embedding of reduced-dimensional structures and 3D continua
- Modeling of fibrous systems/materials with complex fiber arrangements/interactions
- Inverse parameter identification and data-based modeling approaches

## Organization of Scientific Events

- Meier, C., Durville, D., Bruls, O., Gerstmayr, J., Linn, J.: Modeling and discretization approaches for slender continua and their interaction, Organization of minisymposium at the 6th European Conference on Computational Mechanics (ECCM), Glasgow, UK, 2018
- Eisentrager, J., Kaiser, T., Meier, C.: Organization of the YAMM (Young Academics Meet Mentors) Lunch at the 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Vienna, Austria, 2019
- Meier, C., Romero, I., Linn, J., Durville, D., Gerstmayr, Zupan, D., Betsch, P.: Advances in the modeling and discretization of slender continua and their interaction, Organization of minisymposium at the 14th World Congress on Computational Mechanics (WCCM), Paris, France, 2020 [shifted to digital version in 2021 due to COVID-19 pandemic]
- Meier, C., Hodge, N., Chiumenti, M., Wall, W.A.: Modeling and simulation approaches in metal additive manufacturing, Organization of minisymposium at the 14th World Congress on Computational Mechanics (WCCM), Paris, France, 2021
- Meier, C., Hart, A.J., Colosimo, B.M., Eckert, J., Gusarov, A., Hodge, N.: Metal additive manufacturing: Fundamentals, Modeling, Materials, and Implementation, CISM advanced course at the International Centre for Mechanical Science (CISM), Udine, Italy, 2021

## Memberships and Professional Service

Since 01/2017	<b>International Association of Applied Mathematics and Mechanics (GAMM)</b>
Since 01/2017	<b>GAMM Juniors Committee</b>
Since 11/2016	<b>European Community on Computational Methods in Applied Sciences (ECCOMAS)</b>
Since 11/2016	<b>German Association for Computational Mechanics (GACM)</b>
Since 11/2016	<b>International Association for Computational Mechanics (IACM)</b>
Since 2016	<b>Reviewer for Leading International Journals</b> , including Acta Mechanica, Additive Manufacturing, Applied Mathematical Modelling, Applied Physics A, Archive of Applied Mechanics, Computational Mechanics, Computer Methods in Applied Mechanics and Engineering, GAMM-Mitteilungen, International Journal for Numerical Methods in Engineering, International Journal of Non-Linear Mechanics, International Journal of Solids and Structures, Journal of Theoretical and Applied Mechanics, Mechanics Based Design of Structures and Machines, Mechanical Sciences, Metals, Powder Technology, Zeitschrift für Angewandte Mathematik und Mechanik.
Since 2019	<b>Expert reviewer for Marie Skłodowska-Curie COFUND doctoral programmes</b>
Since 2020	<b>Remote Referee for the ERC Consolidator Grant by the European Research Council (ERC)</b>
Since 2021	<b>Reviewer for the Czech Science Foundation (CSF)</b>

## Invitation as Guest Lecturer

- Summer school in Computational Mechanics of Materials and Structures (COMMAS) Universität Stuttgart, 2019
- Short course “*Additive Manufacturing: From 3D Printing to the factory floor*” MIT, July 2018
- Short course “*Additive Manufacturing: From 3D Printing to the factory floor*” MIT, July / August 2017

## Teaching Experience as Lecturer and Student Care

- *Physics-Based Modeling and Simulation of Metal Additive Manufacturing*: lecturer  
Faculty of Mechanical Engineering, TUM, winter term 21/22
  - *Nonlinear Continuum Mechanics*: lecturer  
Faculty of Mechanical Engineering, TUM, winter terms 21/22, 20/21, 19/20, 18/19
  - *Computational Solid and Fluid Dynamics*: lecturer  
Munich School of Engineering (MSE), TUM, winter terms 20/21, 19/20, 18/19
  - *Research Topics in Computational Mechanics – Additive Manufacturing*: lecturer  
Faculty of Mechanical Engineering, TUM, winter terms 20/21, 19/20
  - *Nonlinear Finite Element Methods*: lecturer  
Faculty of Mechanical Engineering, TUM, summer terms 2021, 2020, 2019, 2018
  - *Engineering Mechanics 2*: lecturer (selected chapters with Prof. W. A. Wall)  
Faculty of Mechanical Engineering, TUM, summer term 2019\*
  - *Engineering Mechanics 3 – Dynamics*: exercises, tutorials and administration  
Faculty of Mechanical Engineering, TUM, winter term 11/12\*
  - *Engineering Mechanics 2 – Elastostatics*: exercises, tutorials and administration  
Faculty of Mechanical Engineering, TUM, summer term 2011\*
  - *Engineering Mechanics 1 – Statics*: exercises, tutorials and administration  
Faculty of Mechanical Engineering, TUM, winter term 10/11\*
  - *Virtual Worlds*: advanced training for high school teachers  
Faculty of Mechanical Engineering, TUM, summer term 2015
  - *TM-Applet Project – Teaching Software from Students for Students*: project organization and student supervision
  - *Academic Recognition Service* of course achievements in engineering mechanics
  - *Student Advisory Service*: individual consulting of students, organization of information events and student days
  - *Supervision of more than 20 Bachelor and Master theses*
- \* Up to 1000 undergraduate students typically attend these courses

## Supervised Ph.D. Students (accountable supervision, with Prof. W.A. Wall)

- Experimental and model-based characterization of AM processes on the mesoscale (Reimar Weißbach, MIT, since 2020)
- Microstructure modeling and microstructure-informed constitutive laws for metal AM (Nils Much, TUM, since 2020)
- Modeling of cohesive powders and damping mechanisms in AM-fabricated structures (Patrick Praegla, TUM, since 2020)
- Melt pool modeling for metal AM based on smoothed particle hydrodynamics (Yushen Sun, TUM, since 2019)
- Constitutive laws and self-contact modeling in the complex swelling process of foams (Abhiroop Satheesh, TUM, since 2018)
- Model order reduction for thermo-mechanical part-scale simulation of AM processes (Sebastian Pröll, TUM, since 2018)

- Elasto-hydrodynamic lubrication coupled to mortar formulations for frictional contact (Mostafa Faraji, TUM, since 2018)
- Fluid-structure interaction based on SPH-FEM coupling (Sebastian Fuchs, TUM, since 2016)
- Molecular interactions of slender beams in complex biophysical systems (Maximilian Grill, TUM, 2014 - 2020)

### **Projects and Funding as Principal Investigator**

- Advanced finite element modeling of selective laser melting processes  
€ 60,000 / 18 months, 2016 - 2018  
German Academic Exchange Service (DAAD), Germany  
Postdoctoral research fellowship
- Metal additive manufacturing: fundamentals, modeling, materials and implementation  
€ 25,000 / one-time, 2021  
International Center for Mechanical Sciences (CISM), Italy  
CISM Advanced Course
- Highly efficient numerical model for forward and inverse problems in the physics-based simulation of metal additive manufacturing processes on part scale  
€ 245,000 / 3 years, 2020 - 2023  
German Research Foundation (DFG), Germany
- Development, numerical simulation and experimental characterization of selective laser melting (SLM) microstructures with deliberately introduced dissipation  
€ 470,000 / 3 years, 2020 - 2023  
German Research Foundation (DFG), Germany

### **Projects and Funding as Contributor**

- Combined phase field/DG-FEM modeling of multi-phase flow problems – a modern approach for high-fidelity metal additive manufacturing process simulations  
€ 55,000 / 18 months, 2021 – 2022  
Austrian Science Fund (FWF), Austria  
Erwin Schrödinger Fellowship of Dr. Magdalena Schreter  
Contribution: Proposal conceptualization and writing (co-author), host of fellow
- Physics-based simulation of the powder recoating process and mesoscale melt pool phenomena in metal additive manufacturing  
€ 65,000 / 4 years, 2019 – 2023  
Chinese Scholarship Council (CSC), China  
CSC Fellowship of Mr. Yushen Sun  
Contribution: Proposal conceptualization and writing, host and co-supervisor of fellow

## Publications

### Overview and Citation Metrics

- 22 articles in peer-reviewed scientific journals (plus 2 currently submitted)
- 2 peer-reviewed proceedings and other articles
- > 30 invited and contributed presentations at international conferences
- > 600 citations in total / h-Index of 12 (Google Scholar)

### Peer-Reviewed International Journal Articles

Faraji, M., Seitz, A., Meier, C., Wall, W.A.: A mortar finite element formulation for large deformation lubricated contact problems with smooth transition between mixed, elasto-hydrodynamic and full hydrodynamic lubrication, to be submitted

Proell, S.D., Wall, W.A., Meier, C.: A simple yet consistent constitutive law and mortar-based layer coupling schemes for thermomechanical part-scale simulations of metal additive manufacturing processes, *Advanced Modeling and Simulation in Engineering Sciences*, submitted for publication, arXiv preprint arXiv:2107.11067, 2021

Steinbrecher, I., Popp, A., Meier, C.: Consistent coupling of positions and rotations for embedding 1D Cosserat beams into 3D solid volumes, *Computational Mechanics*, submitted for publication, arXiv preprint arXiv:2107.11151, 2021

Meier, C., Fuchs, S.L., Much, N., Nitzler, J., Penny, R.W., Praegla, P.M., Proell, S.D., Sun, Y., Weissbach, R., Schreter, M., Hodge, N.E., Hart, A.J., Wall, W.A.: Physics-based modeling and predictive simulation of powder bed fusion additive manufacturing across length scales, *GAMM-Mitteilungen*, accepted for publication, arXiv preprint arXiv:2103.16982, 2021

Penny, R.W., Praegla, P.M., Ochsenius, M., Oropeza, D., Weissbach, R., Meier, C., Wall, W.A., Hart, A.J.: Spatial mapping of powder layer density for metal additive manufacturing via transmission X-ray imaging, *Additive Manufacturing*, 46:102197, 2021

Nitzler\*, J., Meier\*, C., Müller, K.W., Wall, W.A., Hodge, N.E.: A novel physics-based and data-supported microstructure model for part-scale simulation of laser powder bed fusion of Ti-6Al-4V, *Advanced Modeling and Simulation in Engineering Sciences*, 8:1-39, 2021

Fuchs, S.L., Meier, C., Wall, W.A., Cyron, C.J.: An SPH framework for fluid-solid and contact interaction problems including thermo-mechanical coupling and reversible phase transitions, *Advanced Modeling and Simulation in Engineering Sciences*, 8:15, 2021

Fuchs, S.L., Meier, C., Wall, W.A., Cyron, C.J.: A novel smoothed particle hydrodynamics and finite element coupling scheme for fluid-structure interaction: the sliding boundary particle approach, *Computer Methods in Applied Mechanics and Engineering*, 383:113922, 2021

Grill, M.J., Eichinger, J.F., Koban, J., Meier, C., Lieleg, O., Wall, W.A.: A novel modeling and simulation approach for the hindered mobility of charged particles in biological hydrogels, *Proceedings of the Royal Society A*, 477: 20210039, 2021

Meier, C., Fuchs, S.L., Hart, A.J., Wall, W.A.: A novel smoothed particle hydrodynamics formulation for thermo-capillary phase change problems with focus on metal additive manufacturing melt pool modeling, *Computer Methods in Applied Mechanics and Engineering*, 381:113812, 2021

- Steinbrecher, I., Mayr, M., Grill, M.J., Kremheller, J., Meier, C., Popp, A.: A mortar-type finite element approach for embedding 1D beams into 3D solid volumes, *Computational Mechanics*, 66:1377-1398, 2020
- Grill, M.J., Meier, C., Wall, W.A.: Investigation of the peeling and pull-off behavior of adhesive elastic fibers via a novel computational beam interaction model, *The Journal of Adhesion*, 1-30, 2019
- Grill, M.J., Wall, W.A., Meier, C.: A computational model for molecular interactions between curved slender fibers undergoing large 3D deformations with a focus on electrostatic, van der Waals, and repulsive steric forces, *International Journal for Numerical Methods in Engineering*, 121:2285-2330, 2020
- Proell, S.D., Wall, W.A., Meier, C.: On phase change and latent heat models in metal additive manufacturing process simulation, *Advanced Modeling and Simulation in Engineering Sciences*, 7:1-32, 2020
- Pattinson, S.W., Huber, M.E., Kim, S., Lee, J., Grunsfeld, S., Roberts, R. Dreifus, G. Meier, C.Liu, L., Hogan, N., Hart, A.J.: Additive manufacturing of biomechanically tailored meshes for compliant wearable and implantable devices, *Advanced Functional Materials*, 29:1901815, 2019
- Meier, C., Weißbach, R., Weinberg, J., Wall, W.A., Hart, A.J.: Modeling and characterization of cohesion in fine metal powders with a focus on additive manufacturing process simulations, *Powder Technology*, 343:855-866, 2019
- Meier, C., Weißbach, R., Weinberg, J., Wall, W.A., Hart, A.J.: Critical influences of particle size and adhesion on the powder layer uniformity in metal additive manufacturing, *Journal of Materials Processing Technology*, 266:484-501, 2019
- Meier, C., Popp, A., Wall, W.A.: Geometrically exact finite element formulations for slender beams: Kirchhoff-Love theory versus Simo-Reissner theory, *Archives of Computational Methods in Engineering*, 26:163-243, 2019
- Meier, C., Grill, M., Wall, W.A., Popp, A.: Geometrically exact finite elements and smooth contact schemes for the modeling of fiber-based materials and structures, *International Journal of Solids and Structures*, 154:124-146, 2018
- Meier, C., Penny, R., Zou, Y., Gibbs, J.S., Hart, A.J.: Thermophysical phenomena in metal additive manufacturing by selective laser melting: Fundamentals, modeling, simulation and experimentation, *Annual Review of Heat Transfer*, 20:241-316, 2017
- Meier, C., Wall, W.A., Popp, A.: Unified approach for beam-to-beam contact, *Computer Methods in Applied Mechanics and Engineering*, 315:972-1010, 2017
- Meier, C., Popp, A., Wall, W.A.: A finite element approach for the line-to-line contact interaction of thin beams with arbitrary orientation, *Computer Methods in Applied Mechanics and Engineering*, 308:377-413, 2016
- Müller, K.W., Meier, C., Wall, W.A.: The resolution of sub-element length scales in Brownian dynamics of biopolymer networks with geometrically exact beam finite elements, *Journal of Computational Physics*, 303C:185-202, 2015
- Meier, C., Popp, A., Wall, W.A.: A locking-free finite element formulation and reduced models for geometrically exact Kirchhoff rods. *Computer Methods in Applied Mechanics and Engineering*, 290:314-341, 2015
- Meier, C., Popp, A., Wall, W.A.: An objective 3D large deformation finite element formulation for geometrically exact curved Kirchhoff rods. *Computer Methods in Applied Mechanics and Engineering*, 278:445-478, 2014

\* Shared first-authorship



## Peer-Reviewed Proceedings and Other Articles

Wall, W.A., Cyron, C.J., Klöppel, T., Meier, C., Müller, K.W.: Coupled problems on the cellular and sub-cellular scale, 4<sup>th</sup> International Conference on Computational Methods for Coupled Problems in Science and Engineering, Kos Island, Greece, 2011

Müller, K.W., Meier, C., Wall, W.A.: Brownian dynamics simulation of cellular protein networks, IACM expressions, 37:2-5, 2015

## Selected International Conference Contributions with Abstract

Meier, C., Hart, A.J., Wall, W.A.: A mesoscale powder spreading and melt pool model for metal powder bed fusion additive manufacturing process simulation, 14<sup>th</sup> World Congress in Computational Mechanics (WCCM), Online Conference, 2021

Meier, C., Hart, A.J., Wall, W.A.: Critical influences of particle size and adhesion on the powder layer uniformity in metal additive manufacturing (**keynote lecture**), 2<sup>nd</sup> International Conference on Simulation for Additive Manufacturing (Sim-AM), Pavia, Italy, 2019

Penny, R., Ochsenius, M., Meier, C., Wall, W.A., Hart, A.J.: Quantification of metal powder layer uniformity for additive manufacturing using transmission X-ray imaging, 30<sup>th</sup> Annual International Solid Freeform Fabrication Symposium (SFF), Austin, USA, 2019

Grill, M.J., Wall, W.A., Meier, C.: Molecular Interactions of Slender Fibers Modeled as Cosserat Continua, 8<sup>th</sup> GACM Colloquium on Computational Mechanics (GACM), Kassel, Germany, 2019

Grill, M.J., Meier, C., Wall, W.A.: Computational modeling of molecular interactions between slender fibers for challenging problems in biophysics, 15<sup>th</sup> International Conference on Computational Plasticity (COMPLAS), Barcelona, Spain, 2019

Popp, A., Steinbacher, I., Meier, C.: Structural mechanics of endovascular stent grafts, 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Vienna, Austria, 2019

Meier, C., Hart, A.J., Wall, W.A.: Metal additive manufacturing by selective laser melting: modeling and simulation approaches across length scales, 13th World Congress on Computational Mechanics (WCCM), New York, USA, 2018

Meier, C., Popp, A., Grill, M.J., Wall, W.A.: Geometrically exact finite element formulations for highly slender beams and their interaction: Kirchhoff-Love theory vs. Simo-Reissner theory, 6<sup>th</sup> European Conference on Computational Mechanics (ECCM), Glasgow, UK, 2018

Grill, M.J., Meier, C., Wall, W.A.: Finite element formulations for molecular interactions of flexible fibers, 6<sup>th</sup> European Conference on Computational Mechanics (ECCM), Glasgow, UK, 2018

Popp, A., Steinbacher, I., Meier, C.: Beam-to-solid contact interaction in stent graft modeling for endovascular repair, 9th Contact Mechanics International Symposium (CMIS), Biella, Italy, 2018

Meier, C., Popp, A., Wall, W.A.: Geometrically exact finite element formulations for highly slender continua and their contact interaction, 4<sup>th</sup> ECCOMAS Young Investigators Conference (YIC), Milan, Italy, 2017

Meier, C., Popp, A., Wall, W.A.: Geometrically exact finite element formulations for slender beams: Kirchhoff-Love theory vs. Simo-Reissner theory, 14<sup>th</sup> US National Congress on Computational (USNCCM), Montreal, Canada, 2017

Popp, A., Meier, C., Oshima, M.: Novel contact algorithms for nonlinear beam models – Beam-to-beam contact, beam-to-solid mesh tying and beam-to-solid contact, 5<sup>th</sup> International

Conference on Computational Contact Mechanics (ICCCM), Lecce, Italy, 2017

Popp, A., Meier, C., Wall, W.A.: A unified framework for beam-to-beam contact interaction, 12<sup>th</sup> World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016

Meier, C., Popp, A., Wall, W.A.: Modeling of highly slender fibers based on geometrically exact Kirchhoff beam elements and a unified contact approach, Euromech Colloquium 569 – Multiscale modeling of fibrous and textile materials, Châtenay-Malabry, France, 2016

Meier, C., Popp, A., Wall, W.A.: A finite element model for arbitrarily oriented fibers and their contact interaction based on geometrically exact Kirchhoff beam elements, 13<sup>th</sup> US National Congress on Computational (USNCCM), San Diego, USA, 2015

Popp, A., Meier, C., Wall, W.A.: A finite element approach for arbitrarily complex contact interaction of geometrically exact 3D Kirchhoff beams, 3<sup>rd</sup> ECCOMAS Young Investigators Conference (YIC), Aachen, Germany, 2015

Mukherjee, D., Meier, C., Müller, K.W., Wall, W.A.: Modeling of cross-linkers in biopolymer networks based on geometrically exact beam formulations, 3<sup>rd</sup> ECCOMAS Young Investigators Conference (YIC), Aachen, Germany, 2015

Meier, C., Popp, A., Wall, W.A.: A finite element approach for contact interaction of thin beams with arbitrary orientation, 4<sup>th</sup> International Conference on Computational Contact Mechanics (ICCCM), Hannover, Germany, May, 2015

Mukherjee, D., Müller, K.W., Meier, C., Wall, W.A.: An approach for the micro-mechanical simulation of biopolymer networks based on geometrically exact beam elements, 11<sup>th</sup> World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014

Müller, K.W., Meier, C., Cyron, C.J., Wall, W.A.: Self-assembly and mechanics of biopolymer networks: development of a Brownian dynamics finite element approach based on geometrically exact, three-dimensional beam elements, 3<sup>rd</sup> International Conference on Particle-Based Methods (Particles), Stuttgart, Germany, 2013

Meier, C., Popp, A., Wall, W.A.: A geometrically nonlinear three-dimensional finite element beam formulation of Kirchhoff type, 12<sup>th</sup> International Conference on Computational Plasticity (COMPLAS), Barcelona, Spain, 2013

Meier, C., Popp, A., Cyron, C. J., Müller, K., Wall, W.A.: A beam-to-beam contact formulation adapted to highly slender structures and its application to biopolymer networks, 20<sup>th</sup> European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Vienna, Austria, 2012

Müller, K.W., Meier, C., Cyron, C.J., Bausch, A.R., Wall, W.A.: Computational approach to the simulation of the viscoelastic behavior of the cytoskeleton using finite beam elements, 8<sup>th</sup> European Solid Mechanics Conference (ESMC), Graz, Austria, 2012

Müller, K.W., Meier, C., Cyron, C.J., Bausch, A.R., Wall, W.A.: A computational approach for the stochastic analysis of crosslinked biopolymer networks, 1<sup>st</sup> ECCOMAS Young Investigators Conference (YIC), Aveiro, Portugal, 2012

Meier, C., Popp, A., Cyron, C. J., Wall, W.A.: A finite element contact formulation for highly slender beam structures and its application to biopolymer networks, 4<sup>th</sup> GACM Colloquium on Computational Mechanics (GACM), Dresden, Germany, 2011