

Publications in this list are grouped according to

- Peer-reviewed Journal Papers
- Books, Book Chapters, etc.
- Published Lecture Notes
- (Reviewed) Proceedings Papers etc.

Peer-reviewed Journal Papers

Submitted papers:

- Willmann H., Wall W.A.: Inverse analysis of material parameters in coupled multi-physics biofilm models. *Advanced Modeling and Simulation in Engineering Sciences*, submitted 2021

Accepted / published papers:

- Fehn N., Kronbichler M., Munch P., Wall W.A.: Numerical evidence of anomalous energy dissipation in incompressible Euler flows: Towards grid-converged results for the inviscid Taylor-Green problem. *Journal of Fluid Mechanics*, accepted 2021
- Pröll S., Wall W.A., Meier C.: A simple yet consistent constitutive law and mortar-based layer coupling schemes for thermomechanical macroscale simulations of metal additive manufacturing processes. *Advanced Modeling and Simulation in Engineering Sciences*, accepted 2021
- Förster K.M., Roth C.J., Hilgendorff A., Ertl-Wagner B., Flemmer A.W., Wall W.A.: In silico numerical simulation of ventilator settings during high frequency ventilation in preterm infants. *Pediatric Pulmonology*, accepted 2021
- Eichinger J.F., Paukner D., Aydin R.C., Wall W.A., Humphrey J.D., Cyron C.J.: What do cells regulate in soft tissues on short time scales?. *Acta Biomaterialia*, accepted 2021
- Penny R., Praegla P.M., Ochsenius M., Oropeza D., Meier C., Wall W.A., Hart J.: Spatial Mapping of Powder Layer Density for Metal Additive Manufacturing via X-ray Microscopy. *Additive Manufacturing*, accepted 2021
- Meier C., Fuchs S.L., Much N., Nitzler J., Penny R.W., Praegla P.M., Pröll S.D., Sun Y., Weissbach R., Schreter M., Hodge N.E., Hart A.J., Wall W.A.: Physics-based modelling and predictive simulation of powder bed fusion additive manufacturing across length scales. accepted *Surveys for Applied Mathematics and Mechanics (GAMM Mitteilungen)*, 2021
- Kremheller J., Brandstätter S., Schrefler B.A., Wall W.A.: Validation and parameter optimization of a hybrid embedded/homogenized solid tumor perfusion model. *International Journal for Numerical Methods in Biomedical Engineering*, accepted 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 Ti-6Al-4V Selective Laser Melting. *Advanced Modeling and Simulation in Engineering Sciences*, accepted 2021
- Eichinger J.F., Grill M.J., Davoodi Kermani I., Aydin R.C., Wall W.A., Humphrey J.D., Cyron C.J.: A computational framework for modeling cell-matrix interactions in soft biological tissues. *Biomechanics and Modeling in Mechanobiology*, accepted 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*, accepted 2021
- Ager C., Seitz A., Wall W.A.: A Consistent Computational Approach for General Fluid-Poroelasticity-Structure-Contact Interaction Problems. *Journal of Computational Physics*, **441** (2021), 110450
- 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*, accepted 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. *Proc. Royal Society A*, accepted 2021
- Wichmann K.-R., Kronbichler M., Löhner R., Wall W.A.: A runtime based comparison of highly tuned lattice Boltzmann and finite difference solvers. *International Journal of High Performance Computing Applications*, accepted 2021
- Brandstaeter S., Fuchs S.L., Biehler J., Aydin R.C., Wall W.A., Cyron C.J.: Global sensitivity analysis of a homogenized constrained mixture model of arterial growth and remodeling. *Journal of Elasticity*, accepted 2021
- Wiesner T.A., Mayr M., Popp A., Gee M.W., Wall W.A.: Algebraic multigrid methods for saddle point systems arising from mortar contact formulations. *International Journal for Numerical Methods in Engineering*, accepted 2021
- Meier C., Fuchs S.L., Hart 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** (2021), 113812
- Slepukhin V.M., Grill M.J., Hu Q., Botvinick E.L., Wall W.A., Levine A.J.: Topological defects produce kinks in biopolymer filament bundles. *PNAS*, **118/15** (2021) e2024362118; <https://doi.org/10.1073/pnas.2024362118>
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