



Professor Wolfgang A. Wall

See:

<https://www.lnm.mw.tum.de/staff/wall/>

Head, Institute for Computational Mechanics [Lehrstuhl für Numerische Meckanik (LNM)]
Technical University of Munich

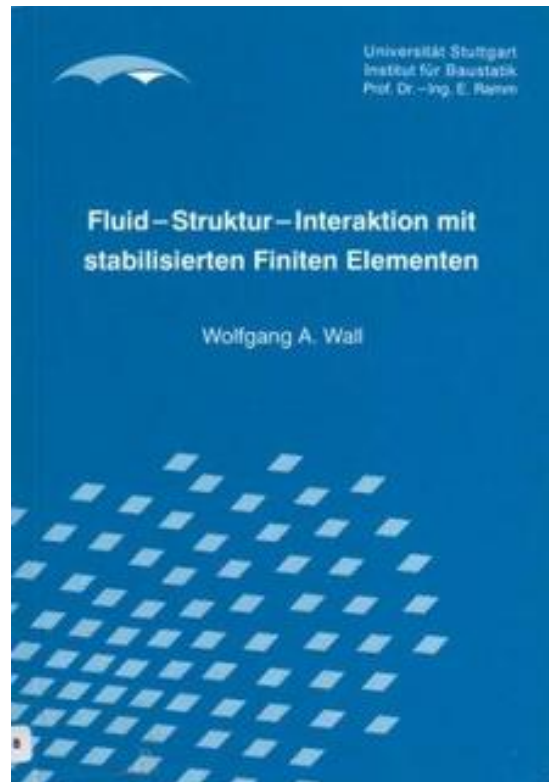
Research Interests:

Since its founding in 2003, LNM has been committed to what can best be described as cutting-edge "application-motivated fundamental research" in a broad range of research areas in computational mechanics. With a strong basis in both computational solid and fluid dynamics, the current focus lies on multi-field and multi-scale problems as well as on computational bioengineering. In all these areas, LNM covers the full spectrum from advanced modeling and the development of novel computational methods to sophisticated software development and application-oriented simulations on high performance computing systems.

Selected Publications:

----BOOK (Ph.D. dissertation)---- Wall, W.A., "Fluid-Struktur-Interaktion mit Stabilisierten Finiten Elementen", Bericht Nr. 31, Institut für Baustatik, Universität Stuttgart, 1999 (in German)

Mayr M., Klöppel T., Wall W.A., Gee M.W.: A Temporal Consistent Approach to Fluid-Structure Interaction Enabling Single Field Predictors. SIAM Journal on Scientific Computing, accepted 2014



From: Wall, W.A., "Fluid-Struktur-Interaktion mit Stabilisierten Finiten Elementen", Ph.D. dissertation, Bericht Nr. 31, Institut für Baustatik, Universität Stuttgart, 1999 (in German)

- Henke F., Winklmaier M., Gravemeier V., Wall W.A.: A semi-Lagrangian time-integration approach for extended finite element methods. *International Journal for Numerical Methods in Engineering*, 98 (3) (2014) 174-202
- Danowski C., Gravemeier V., Yoshihara L., Wall W.A.: A monolithic computational approach to thermo-structure interaction. *International Journal for Numerical Methods in Engineering*, 95 (13) (2013) 1053-1078
- Popp A., Seitz A., Gee M.W., Wall W.A.: Improved robustness and consistency of 3D contact algorithms based on a dual mortar approach. *Computer Methods in Applied Mechanics and Engineering* 264 (2013) 67-80
- Klöppel T., Popp A., Küttler U., Wall W.A.: Fluid-structure interaction for non-conforming interfaces based on a dual mortar formulation. *Computer Methods in Applied Mechanics and Engineering* 200 (45-46) (2011) 3111-3126
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- Wall W.A., Küttler U., Gerstenberger A., Gee M., Förster Ch.: Advances in computational fluid-thin-walled-structure interaction – formulations and solvers. *New Trends in Thin Structures: Formulation, Optimization and Coupled Problems*, Series: CISM International Centre for Mechanical Sciences 519, Springer, 2010, 175-203
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- Küttler U., Wall W.A.: Vector extrapolation for strong coupling fluid-structure interaction solvers. *Journal of Applied Mechanics* 76 (2) (2009) 1-7
- Wall W.A., Rabczuk T.: Fluid-structure interaction in lower airways of CT-based lung geometries. *International Journal for Numerical Methods in Fluids* 57 (2008) 653-675

- Küttler U., Wall W.A.: Fixed-point fluid-structure interaction solvers with dynamic relaxation. *Computational Mechanics* 43 (2008) 61-72, Springer, 2008
- Wall W.A., Gammnitzer P., Gerstenberger A.: Fluid-structure interaction approaches on fixed grids based on two different domain decomposition ideas. *International Journal of Computational Fluid Dynamics* 22 (2008) 411-427
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