

Center for Computational Science and Engineering
Department of Mathematics
RWTH Aachen University
Schinkelstraße 2
D-52062 Aachen, Germany

room: 332a (Rogowski building, 3rd floor)
phone: +49 (0)241 80 98673
email: gatto@mathcces.rwth-aachen.de

PUBLICATIONS

Submitted

- [1] P. Gatto, R.E. Christiansen, J.S. Hesthaven. Efficient Preconditioning of hp -FEM Matrix Sequences with Slowly Varying Coefficients: an Application to Topology Optimization. Submitted to *Computer Methods in Applied Mechanics and Engineering*.

Peer reviewed articles

- [1] P. Gatto, J.S. Hesthaven. Efficient Preconditioning of hp -FEM Matrices by Hierarchical Low-Rank Approximations, *Journal of Scientific Computing*, 1573-7691 (1-32), 2017.[†]
- [2] P. Gatto, J.S. Hesthaven. Numerical Approximation of the Fractional Laplacian via hp -finite Elements, with an Application to Image Denoising. *Journal of Scientific Computing*, 0885-7474 (1-22), 2014.[†]
- [3] P. Gatto, L. Demkowicz. Modeling bone conduction of sound in the human head: II. Simulation results. *Journal of Computational Acoustics*, Volume 21, Number 04, 2013.[†]
- [4] L. Demkowicz, P. Gatto, J. Kurtz, M. Paszynski, W. Rachowicz, E. Bleszynski, M. Bleszynski, M. Hamilton, C. Champlin, D. Pardo. Modeling of bone conduction of sound in the human head using hp -finite elements: Code design and verification. *Computer Methods in Applied Mechanics and Engineering*, 200 (21-22): 1757-1773, 2011.[†]
- [5] R.S. Falk, P. Gatto, P. Monk. Hexahedral $H(\text{div})$ and $H(\text{curl})$ Finite Elements. *ESAIM: Mathematical Modeling and Numerical Analysis*, January 2011: pp 115-143.[†]
- [6] P. Gatto, L. Demkowicz. Construction of H^1 -conforming hierarchical shape functions for elements of all shapes and transfinite interpolation. *Finite Elem. Anal. Des.*, Vol. 46, Issue 6, June 2010: pp 474-486.[†]
- [7] L. Demkowicz, P. Gatto, W. Qiu, A. Joplin. G^1 -interpolation and geometry reconstruction for higher order finite elements. *Computer Methods in Applied Mechanics and Engineering*, 198 (13-14): 1198-1212, March 2009.

Most important publications are marked with [†].