

Dr Jens-Dominik Mueller

Dipl-Ing, MSc, PhD

School of Engineering and Materials Science
Queen Mary University of London
Mile End Road
London E1 4NS

tel: +44 (0)20 7882 5421

email: j.mueller@qmul.ac.uk web: www.sems.qmul.ac.uk/j.mueller

2021

Fallow time determination in dentistry using aerosol measurement in mechanically and non-mechanically ventilated environments.

Shahdad S, Hindocha A, Patel T, Cagney N, Mueller JD, Koched A, Seoudi N, Morgan C, Fleming PS and Din AR. *British Dental Journal (Bdj).Springer Nature [Academic Journals On Nature.Com]*.

A Unified Geometry Parametrization Method for Turbomachinery Blades.

Agromayor R, Anand N, Müller JD, Pini M and Nord LO. *Cad Computer Aided Design vol. 133.,Elsevier*.

2020

An adjoint-assisted multilevel multifidelity method for uncertainty quantification and its application to turbomachinery manufacturing variability.

Mohanamuraly P and Müller JD. *International Journal For Numerical Methods in Engineering.Wiley*.

A mesh adaptation strategy for complex wall-modeled turbomachinery LES.

Odier N, Thacker A, Harnieh M, Staffelbach G, Gicquel L, Duchaine F, García-Rosa N and Müller JD. *Computers and Fluids vol. 214.,Elsevier*.

The efficacy of an extraoral scavenging device on reduction of splatter contamination during dental aerosol generating procedures: an exploratory study.

Shahdad S, Patel T, Hindocha A, Cagney N, Mueller JD, Seoudi N, Morgan C and Din A. *British Dental Journal (Bdj).Springer Nature [Academic Journals On Nature.Com]*.

Consistent treatment of incompletely converged iterative linear solvers in reverse-mode algorithmic differentiation.

Akbarzadeh S, Hüchelheim J and Müller JD. *Computational Optimization and Applications.Springer (Part of Springer Nature)*.

Seeding and adjoining zero-halo partitioned parallel scientific codes.

Mohanamuraly P, Hascoët L and Müller JD. *Optimization Methods and Software vol. 35, (3) 618-637*.

Quantitative analysis of particulate matter release during orthodontic procedures: a pilot study.

Din AR, Hindocha A, Patel T, Sudarshan S, Cagney N, Koched A, Mueller JD, Seoudi N, Morgan C, Shahdad S and Fleming PS. *British Dental Journal*.

2019

A Newton-Krylov Solver for Robust Turbomachinery Aerodynamic Analysis.

Xu S, Mueller J-D, Pavanakumar M and Wang D. *Aiaa Journal: Devoted to Aerospace Research and Development. American Institute of Aeronautics and Astronautics*.

Geometric continuity constraints of automatically derived parametrisations in CAD-based shape optimisation.

Mueller J, ZHANG X, Akbarzadeh S and WANG Y. *International Journal of Computational Fluid Dynamics.Taylor & Francis*.

Intracranial aneurysms: looking beyond size in neuroimaging: the role of anatomical factors and haemodynamics.

Roi DP, Mueller J-D, Lobotesis K, McCague C, Memarian S, Khan F and Mankad K. *Quantitative Imaging in Medicine and Surgery* vol. 9, (4) 537-545.

Checkpointing with Time Gaps for Unsteady Adjoint CFD.

Hückelheim JC and Müller JD. *Computational Methods in Applied Sciences*.

Adjoint-based aerodynamic optimisation of wing shape using non-uniform rational B-splines.

Zhang X, Jesudasan R and Müller JD. *Computational Methods in Applied Sciences*.

A comparative study of two different CAD-based mesh deformation methods for structural shape optimization.

Schwalbach M, Verstraete T, Müller JD and Gauger N. *Computational Methods in Applied Sciences*.

2018

Algorithmic differentiation of the Open CASCADE Technology CAD kernel and its coupling with an adjoint CFD solver.

Banović M, Mykhaskiv O, Auriemma S, Walther A, Legrand H and Müller JD. *Optimization Methods and Software* vol. 33, (4-6) 813-828.

Parallelizable adjoint stencil computations using transposed forward-mode algorithmic differentiation.

Hückelheim JC, Hovland PD, Strout MM and Müller JD. *Optimization Methods and Software* vol. 33, (4-6) 672-693.

Sensitivity Analysis and Gradient-based Optimisation of Feed Spacer Shape in Reverse Osmosis Membrane Processes Using Discrete Adjoint Approach.

MUELLER J, Wang Y and HE W. *Desalination.Elsevier*.

2017

NURBS-based and Parametric-based Shape Optimisation with differentiated CAD Kernel.

mykhaskiv O, MUELLER J, Banovic M, Auriemma S, Mohanamuraly P, Walther A and Legrand H. *Computer-Aided Design and Applications.Taylor & Francis*.

Wing-body junction optimisation with CAD-based parametrisation including a moving intersection.

Xu S, Timme S, Mykhaskiv O and Müller JD. *Aerospace Science and Technology* vol. 68, 543-551.

A Mesh Adaptation Strategy to Predict Pressure Losses in LES of Swirled Flows.

Daviller G, Brebion M, Xavier P, Staffelbach G, Müller JD and Poinso T. *Flow, Turbulence and Combustion* vol. 99, (1) 93-118.

Reverse-mode algorithmic differentiation of an OpenMP-parallel compressible flow solver.

MUELLER J, hueckelheim J, hovland P and Strout M. *International Journal of High Performance Computing Applications.Sage Publications*.

ADJOINT BASED DESIGN OPTIMISATION OF AN INTERNAL COOLING CHANNEL U-BEND FOR MINIMIZED PRESSURE LOSSES.

MUELLER J, verstraete T and Mueller L. *International Journal of Turbomachinery Propulsion and Power*.manna M.

Adjoint-based design optimisation of an internal cooling channel u-bend for minimised pressure losses.

Verstraete T, Müller L and Müller JD. *International Journal of Turbomachinery, Propulsion and Power* vol. 2, (2). *Mdpi*.

2016

Algorithmic differentiation of code with multiple context-specific activities.

Hückelheim JC, Hascoët L and Müller JD. *Acm Transactions On Intelligent Systems and Technology* vol. 43, (4).

2015

LES Study of Transverse Acoustic Instabilities in a Swirled Kerosene/Air Combustion Chamber.

Ghani A, Poinso T, Gicquel L and Müller JD. *Flow, Turbulence and Combustion* vol. 96, (1) 207-226.

Stabilisation of discrete steady adjoint solvers.

Xu S, Radford D, Meyer M and Müller JD. *Journal of Computational Physics* vol. 299, 175-195.

2013

CAD-based shape optimisation with CFD using a discrete adjoint.

Xu S, Jahn W and Müller J-D. *International Journal For Numerical Methods in Fluids*.

2012

One-shot optimisation with grid adaptation using adjoint sensitivities (ECCOMAS 2012).

Jaworski AB, Müller JD and Rokicki J. *Eccomas 2012 - European Congress On Computational Methods in Applied Sciences and Engineering, E-Book Full Papers* 3685-3693.

CFD development with automatic differentiation.

Jones D, Müller JD and Bayyuk S. *50th Aiaa Aerospace Sciences Meeting Including The New Horizons Forum and Aerospace Exposition*.

Acoustic and Large Eddy Simulation studies of azimuthal modes in annular combustion chambers.

Wolf P, Staffelbach G, Gicquel LYM, Müller JD and Poinsot T. *Combustion and Flame* vol. 159, (11) 3398-3413.

Sensitivity of flow simulations in a cerebral aneurysm.

Müller JD, Jitsumura M and Müller-Kronast NHF. *Journal of Biomechanics* vol. 45, (15) 2539-2548.

Acoustic and Large Eddy Simulation studies of azimuthal modes in annular combustion chambers.

Wolf P, Staffelbach G, Gicquel LYM, Müller J-D and Poinsot T. *Combustion and Flame*.

Goal-based flow optimisation for automotive design.

Mueller J-D, Jones D, Jahn W, Othmer C, Megahed M, Hollette N, Pierrot G, Bletzinger K-U and Stavropolou E. *Transport Research Arena 2012* vol. 48, 3599-3612.

2011

Pseudo-timestepping and verification for automatic differentiation derived CFD codes.

Christakopoulos F, Jones D and Mueller J-D. *Computers & Fluids* vol. 46, (1) 174-179.

Preparation and assembly of discrete adjoint CFD codes.

Jones D, Müller JD and Christakopoulos F. *Computers and Fluids* vol. 46, (1) 282-286.

CAD-based shape optimisation using adjoint sensitivities.

Yu G, Müller JD, Jones D and Christakopoulos F. *Computers and Fluids* vol. 46, (1) 512-516.

2010

Challenges of developing engineering students' writing through peer assessment.

McConlogue T, Mueller J and Shelton J. *Engineering Education 2010: Inspiring The Next Generation of Engineers, Ee 2010*.

Discretisation of diffusive fluxes on hybrid grids.

Puigt G, Auffray V and Müller JD. *Journal of Computational Physics* vol. 229, (5) 1425-1447.

2008

Toward modular multigrid design optimisation.

Jaworski A and Müller JD. *Lecture Notes in Computational Science and Engineering* vol. 64 LNCSE, 281-291.

Validation of a fluid-structure interaction model for a bileaflet mechanical heart valve.

Forsythe N and Mueller JD. *Int J Comput Fluid D* vol. 22, (8) 541-553.

2003

Algorithm developments for discrete adjoint methods.

Giles MB, Duta MC, Müller JD and Pierce NA. *Aiaa Journal* vol. 41, (2) 198-205.

2002

Edge-based multigrid and preconditioning for hybrid grids.

Moinier P, Müller JD and Giles MB. *Aiaa Journal* vol. 40, (10) 1954-1960.

2001

Adaptive local grid refinement for unsteady reacting flows.

Müller JD, Schönfeld ET and L'Égier JP. *15th Aiaa Computational Fluid Dynamics Conference*.

Solution adaptive mesh refinement using adjoint error analysis.

Müller JD and Giles MB. *15th Aiaa Computational Fluid Dynamics Conference*.