

David Moxey

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Research vision

My research aims to reveal the fluid dynamics underpinning the transition to turbulence, both from an academic perspective and in real-world problems within the aeronautics industry. To achieve this, I develop novel numerical high-order methods, which are capable of fully using today's modern supercomputers, to gain unparalleled insight into the mechanisms governing transition. I am an advocate of high-impact open-source software, and I am a project leader of the *Nektar++* spectral/*hp* element framework (www.nektar.info) to make these methods available to both academic and industrial partners.

Employment

present	Professor of Computational Engineering, Dept. of Engineering, King's College London
present	Honorary Senior Lecturer, Dept. of Aeronautics, Imperial College London
present	Honorary Associate Professor, Dept. of Engineering, University of Exeter
8/21 - 8/23	Reader in Engineering, Department of Engineering, King's College London
2/19 - 8/21	Senior Lecturer in Engineering, CEMPS, University of Exeter
3/17 - 2/19	Lecturer in Engineering, CEMPS, University of Exeter
3/17 - 7/20	Visiting Researcher, Dept. of Aeronautics, Imperial College London
11/15 - 3/17	Research & Teaching Fellow, Dept. of Aeronautics, Imperial College London
6/11 - 11/15	Research Associate, Department of Aeronautics, Imperial College London

Education

Jun. 2011	Ph.D. Mathematics, University of Warwick
thesis	<i>Spatio-temporal dynamics in pipe flow</i> , supervised by Prof. Dwight Barkley.
Jun. 2007	M.Math. Mathematics (1st class hon.), University of Warwick
dissertation	<i>Simulation of polymer chains using Monte Carlo methods</i> , supervised by Prof. Mike Allen.

Research income (100% FEC)

May 2023	Modelling cryogenic liquids towards net-zero aviation (£17,000) Joint PI for project funded under the King's climate & sustainability seed fund, running computational and physical experiments to better understand and safely store cryogenic hydrogen.
Sept. 2022	NEPTUNE: Investigating high-order methods for nuclear fusion (£472,454) PI for project funded by the UK Atomic Energy Authority under the strategic priorities fund ExCALBIUR programme , developing solvers for high-order methods in nuclear fusion modelling.
Jan. 2022	NEPTUNE: High-dimensional models for fusion applications (£196,000) Co-I on project funded by the UK Atomic Energy Authority under the strategic priorities fund ExCALBIUR programme , investigating the use of high-dimensional discretisations for fusion reactors.
Aug. 2021	Exa-UQ: Uncertainty Quantification at the Exascale (£1,237,384) Co-I on the EPSRC-funded project Exa-UQ (EP/W007886/1) as part of ExCALIBUR, investigating the use of uncertainty quantification for exascale computing.
Jul. 2021	Advanced Parallel in Time Algorithms for Partial Differential Equations (£1,152,297) Co-I on the Met Office-funded bid APinTA as part of ExCALIBUR, investigating the use of parallel-in-time methods for exascale computing.
Nov. 2020	NEPTUNE: Investigating high-order methods for nuclear fusion (£606,015) PI (with Imperial College) and Co-I (with University of York) on two research projects with the UK Atomic Energy Authority under ExCALIBUR, investigating the use of high-order methods in nuclear fusion modelling.

- May 2020 Knowledge Transfer Partnership (£249,870)**
Co-PI on KTP with Torin Sifan Ltd to embed CFD technology within their design and manufacturing process.
- Apr. 2020 ELEMENT: Exascale Mesh Network (£245,611)**
Co-I on the ELEMENT project ([EP/V001345/1](#)), to address challenges the high-priority exascale use case of mesh generation and adaption under the ExCALIBUR programme.
- Feb. 2019 University of Exeter Mobility Fellowship (£5,000)
- Aug. 2018 NVIDIA GPU Grant Program (£5,000)
- Jul. 2018 PRISM: Platform for Research In Simulation Methods (£1,612,965)**
Co-I on EPSRC Platform Grant PRISM ([EP/R029423/1](#)), which draws together expertise in designing, analysing and implementing sophisticated numerical methods and techniques, deploying them across a broad range of industrial, biomedical and environmental applications, and developing software tools that deliver portable parallel performance.
- Nov. 2015 ARCHER Leadership Project (£165,796)**
Co-I on EPSRC leadership-scale computing resource (20 million CPU hours) on national supercomputer ARCHER. Produced first scale-resolving simulations for extremely complex Formula 1 geometries using high-order methods.
- Jun. 2015 ARCHER Resource Allocation Panel (£22,256)
- Apr. 2015 Horizon 2020 project ExaFLOW (€3,312,235)**
Co-I and main work package leader of the EU Horizon 2020 project ExaFLOW, developing numerical methods for CFD on exascale computing platforms. Consortium consists of 8 partners from academia and industry.
- Jul. 2014 EPCC Embedded CSE grant (1 person year)
- Jan. 2014 ARCHER Resource Allocation Panel (£16,153)
- Oct. 2007 EPSRC Ph.D. scholarship (£45,500)

Postgraduate supervision

- Ted Stokes (KCL, main supervisor, since Nov. 2023)
- Boyang Xia (KCL, China Science Council funding, main supervisor, since Sept. 2022).
- Alexandra Liosi (Imperial/McLaren Racing, co-supervisor, since Sept. 2021).
- Parv Khurana (Imperial/McLaren Racing, co-supervisor, since Sept. 2021).
- Kaloyan Kirilov (Imperial, co-supervisor, since Sept. 2021).
- Henrik Wustenberg (Imperial, co-supervisor, since Sept. 2021).
- Dr. Edward Laughton (Exeter, main supervisor, 2018-2023, now Trainee Patent Attorney at J A Kemp).
- Dr. Mikkel Lykkegaard (Exeter, co-supervisor, 2018-2022, now Data Science Lead at di-giLab).
- Dr. Michael Turner (Imperial, co-supervisor, 2013-2017, now Senior Software Engineer at First Light Fusion).
- Dr. Daniele de Grazia (Imperial, mentor, 2012-2016, now Flight Model Specialist at TXT e-solutions).
- Dr. Dirk Ekelschot (Imperial, mentor, 2011-2015, now Aerothermodynamicist at NASA Ames).
- Dr. Gianmarco Mengaldo (Imperial, mentor, 2011-2015, now Assistant Professor at National University of Singapore).

Academic citizenship

- Fellow of the **Higher Education Academy**.
- **External and internal examiner for postgraduate students:**
 - Dr. David Jones, Swansea University (external examiner);
 - Dr. Guillermo Aparicio, Universitat Politècnica de Catalunya (committee chair);
 - Dr. Semih Akkurt, Imperial College London (external examiner);

- Dr. Walid Hambli, Imperial College London (internal examiner);
- Dr. Matthew Riella, University of Exeter (internal examiner);
- Dr. Jacopo Canton, KTH Stockholm (licentiate opponent);
- Dr. Manuel Felipe Mejia De Alba, Universidad de Los Andes (committee member).
- Assessment Sub-Board chair, Department of Engineering, **King's College London**.
- Member of the **UK Turbulence Consortium** (EPSRC, [EP/R029326/1](#)).
- Reviewer for a number of academic journals, including: *AIAA Journal* | *Computer-Aided Design* | *Computer Methods in Applied Mechanics and Engineering* | *Computer Physics Communications* | *Flow, Turbulence and Combustion* | *International Journal of Heat and Fluid Flow* | *Journal of Computational Physics* | *Journal of Fluid Mechanics* | *Journal of Scientific Computing* | *Proceedings of the Royal Society* | *SoftwareX* | *SIAM Journal on Scientific Computing*.
- Member of several committees, including the *Faculty Assessment Board, Engineering Education and Engineering Research, King's College London* (2021-), and the *Industrial Advisory Group, University of Exeter* (2017-2021).
- Employability coordinator in Engineering, **University of Exeter** (2017-2021).

Publications

Journal Publications

- under review A geometrically informed algebraic multigrid preconditioned iterative approach for solving high-order finite element systems
S. Xu, M. Rasouli, R. M. Kirby, D. Moxey and H. Sundar
under review in Comput. Phys. Commun.
- 2024 [Flight-ready electrical capacitance tomography SMARTTS tank for use with cryogenics](#)
M. D. Green, R. Foster-Turner, A. Hunt, A. M. Ramirez-Mancebo, S. C. Lieber, J. W. Hartwig, D. Moxey and A. Tafuni
Exp. Therm. Fluid Sci. (154), p. 111144. DOI: [10.1016/j.expthermflusci.2024.111144](#).
- [NekMesh: An open-source high-order mesh generation framework](#)
M. D. Green, K. S. Kirilov, M. Turner, J. Marcon, J. Eichstädt et al.
Comput. Phys. Commun. (298), p. 109089. DOI: [10.1016/j.cpc.2024.109089](#).
- 2023 [Efficient vectorised kernels for unstructured high-order finite element fluid solvers on GPU architectures in two dimensions](#)
J. Eichstädt, J. Peiró and D. Moxey
Comput. Phys. Commun. **284**, p. 108624. DOI: [10.1016/j.cpc.2022.108624](#).
- [Large eddy simulation of an inverted multi-element wing in ground effect](#)
J. Slaughter, D. Moxey and S. J. Sherwin
Flow Turbul. Combust. (110), pp. 917–944. DOI: [10.1007/s10494-023-00404-7](#).
- 2022 [Spectral/hp element simulation of flow past a Formula One front wing: validation against experiments](#)
F. F. Buscariolo, J. Hoessler, D. Moxey, A. Jassim, K. Gouder et al.
J. Wind. Eng. Ind. Aerod. **221**, p. 104832. DOI: [10.1016/j.jweia.2021.104832](#).
- [Fast barycentric-based evaluation over spectral/hp elements](#)
E. Laughton, V. Zala, A. Narayan, R. M. Kirby and D. Moxey
J. Sci. Comp. **90**, p. 78. DOI: [10.1007/s10915-021-01750-2](#).

- 2021 [A comparison of interpolation techniques for non-conformal high-order discontinuous Galerkin methods](#)
E. Laughton, G. Tabor and [D. Moxey](#)
Comput. Meth. Appl. Mech. Eng. **381**, p. 113820. DOI: [10.1016/j.cma.2021.113820](#).
- [Accelerating uncertainty quantification of groundwater flow modelling using deep neural networks](#)
M. B. Lykkegaard, T. Dodwell and [D. Moxey](#)
Comput. Meth. Appl. Mech. Eng. **383**, p. 113895. DOI: [10.1016/j.cma.2021.113895](#).
- [Industry-relevant implicit large-eddy simulation of a high-performance road car via spectral/hp element methods](#)
G. Mengaldo, [D. Moxey](#), M. Turner, R. C. Moura, A. Jassim, M. Taylor, J. Peiró and S. J. Sherwin
SIAM Review (4), pp. 723–755. DOI: [10.1137/20M1345359](#).
- [Nektar++: Design and implementation of an implicit spectral/hp element compressible flow solver using a Jacobian-free Newton Krylov approach](#)
Z. Yan, Y. Pan, G. Castiglioni, K. Hillewaert, J. Peiró, [D. Moxey](#) and S. J. Sherwin
Comput. Math. Appl. **81**, pp. 351–372. DOI: [10.1016/j.camwa.2020.03.009](#).
- 2020 [A comparison of the shared-memory parallel programming models OpenMP, OpenACC and Kokkos in the context of implicit solvers for high-order FEM](#)
J. Eichstädt, M. Vymazal, [D. Moxey](#) and J. Peiró
Comput. Phys. Commun. **255**, p. 107245. DOI: [10.1016/j.cpc.2020.107245](#).
- [rp-adaptation for compressible flows](#)
J. Marcon, G. Castiglioni, [D. Moxey](#), S. J. Sherwin and J. Peiró
Int. J. Numer. Meth. Eng. **121** (23), pp. 5405–5425. DOI: [10.1002/nme.6529](#).
- [Efficient matrix-free high-order finite element evaluation for simplicial elements](#)
[D. Moxey](#), R. Amici and R. M. Kirby
SIAM J. Sci. Comput. **42** (3), pp. C97–C123. DOI: [10.1137/19M1246523](#).
- [Nektar++: enhancing the capability and application of high-fidelity spectral/hp element methods](#)
[D. Moxey](#), C. D. Cantwell, Y. Bao, A. Cassinelli, G. Castiglioni et al.
Comput. Phys. Commun. **249**, p. 107110. DOI: [10.1016/j.cpc.2019.107110](#).
- 2019 [Interpolation error bounds for curvilinear finite elements and their implications on adaptive mesh refinement](#)
[D. Moxey](#), S. P. Sastry and R. M. Kirby
J. Sci. Comp. **78** (2), pp. 1045–1062. DOI: [10.1007/s10915-018-0795-6](#).
- [On weak Dirichlet boundary conditions for elliptic problems in the continuous Galerkin method](#)
M. Vymazal, [D. Moxey](#), S. Sherwin, C. D. Cantwell and R. M. Kirby
J. Comput. Phys. **394**, pp. 732–744. DOI: [10.1016/j.jcp.2019.05.021](#).
- [Turbulence in a localized puff in a pipe](#)
A. Yakhot, Y. Feldman, [D. Moxey](#), S. J. Sherwin and G. E. Karniadakis
Flow Turbul. Combust. **103** (1), pp. 1–24. DOI: [10.1007/s10494-018-0002-8](#).
- 2018 [Accelerating high-order mesh generation with an architecture-independent programming model](#)
J. Eichstädt, M. Green, M. Turner, J. Peiró and [D. Moxey](#)
Comput. Phys. Commun. **229**, pp. 36–53. DOI: [10.1016/j.cpc.2018.03.025](#).
- [DNS of a compressible boundary layer flow past an isolated three-dimensional hump in a high-speed subsonic regime](#)
D. de Grazia, [D. Moxey](#), S. J. Sherwin, M. A. Kravtsova and A. I. Ruban
Phys. Rev. Fluids **3**, p. 024101. DOI: [10.1103/PhysRevFluids.3.024101](#).
- [Curvilinear mesh generation using a variational framework](#)
M. Turner, J. Peiró and [D. Moxey](#)
Comput. Aided Design **103**, pp. 73–91. DOI: [10.1016/j.cad.2017.10.004](#).

- 2017 [A \$p\$ -adaptation method for compressible flow problems using a goal-based error estimator](#)
D. Ekelschot, **D. Moxey**, S. J. Sherwin and J. Peiró
Comput. Struct. **181**, pp. 55–69. DOI: [10.1016/j.compstruc.2016.03.004](#).
- 2016 [An adaptable parallel algorithm for the direct numerical simulation of incompressible turbulent flows using a Fourier spectral/hp element method and MPI virtual topologies](#)
A. Bolis, C. D. Cantwell, **D. Moxey**, D. Serson and S. J. Sherwin
Comput. Phys. Commun. **206**, pp. 17–25. DOI: [10.1016/j.cpc.2016.04.011](#).
- [Implicit large-eddy simulation of a wingtip vortex](#)
J.-E. W. Lombard, **D. Moxey**, S. J. Sherwin, J. F. A. Hoessler, S. Dhandapani and M. J. Taylor
AIAA J. **54** (2), pp. 506–518. DOI: [10.2514/1.J054181](#).
- [Optimizing the performance of the spectral/hp element method with collective linear algebra operations](#)
D. Moxey, C. D. Cantwell, R. M. Kirby and S. J. Sherwin
Comput. Meth. Appl. Mech. Eng. **310**, pp. 628–645. DOI: [10.1016/j.cma.2016.07.001](#).
- [High-order curvilinear meshing using a thermo-elastic analogy](#)
D. Moxey, D. Ekelschot, Ü. Keskin, S. J. Sherwin and J. Peiró
Comput. Aided Design **72**, pp. 130–139. DOI: [10.1016/j.cad.2015.09.007](#).
- [To CG or to HDG: a comparative study in 3D](#)
S. Yakovlev, **D. Moxey**, S. J. Sherwin and R. M. Kirby
J. Sci. Comp. **67** (1), 192–220. DOI: [10.1007/s10915-015-0076-6](#).
- 2015 [Nektar++: An open-source spectral/hp element framework](#)
C. D. Cantwell, **D. Moxey**, A. Comerford, A. Bolis, G. Rocco et al.
Comput. Phys. Commun. **192**, pp. 205–219. DOI: [10.1016/j.cpc.2015.02.008](#).
- [Dealiasing techniques for high-order spectral element methods on regular and irregular grids](#)
G. Mengaldo, D. de Grazia, **D. Moxey**, P. E. Vincent and S. J. Sherwin
J. Comput. Phys. **299**, pp. 56–81. DOI: [10.1016/j.jcp.2015.06.032](#).
- [An isoparametric approach to high-order curvilinear boundary-layer meshing](#)
D. Moxey, M. D. Green, S. J. Sherwin and J. Peiró
Comput. Meth. Appl. Mech. Eng. **283**, pp. 636–650. DOI: [10.1016/j.cma.2014.09.019](#).
- 2014 [Simplifying the Development, Use and Sustainability of HPC Software](#)
J. Cohen, C. D. Cantwell, N. P. Chue Hong, **D. Moxey**, M. Illingworth, A. Turner, J. Darlington and S. J. Sherwin
J. Open Res. Soft. **2** (1). DOI: [10.5334/jors.az](#).
- [Stability of projection methods for incompressible flows using high order pressure-velocity pairs of same degree: Continuous and Discontinuous Galerkin formulations](#)
E. Ferrer, **D. Moxey**, S. J. Sherwin and R. H. J. Willden
Commun. Comp. Phys. **16** (3), pp. 817–840. DOI: [10.4208/cicp.290114.170414a](#).
- [Connections between the discontinuous Galerkin method and high-order flux reconstruction schemes](#)
D. de Grazia, G. Mengaldo, **D. Moxey**, P. E. Vincent and S. J. Sherwin
Int. J. Numer. Meth. Fl. **75** (12), pp. 860–877. DOI: [10.1002/flid.3915](#).
- 2011 [The onset of turbulence in pipe flow](#)
K. Avila, **D. Moxey**, A. de Lozar, M. Avila, D. Barkley and B. Hof
Science **333** (6039), pp. 192–196. published as a research article. DOI: [10.1126/science.1203223](#).
- 2010 [Distinct large-scale turbulent-laminar states in transitional pipe flow](#)
D. Moxey and D. Barkley
Proc. Nat. Acad. Sci. **107** (18), pp. 8091–8096. DOI: [10.1073/pnas.0909560107](#).

Book Chapters

- 2015 [On the generation of curvilinear meshes through subdivision of isoparametric elements.](#)
D. Moxey, M. D. Green, S. J. Sherwin and J. Peiró.
New Challenges in Grid Generation and Adaptivity for Scientific Computing, pp. 203–215.
 DOI: [10.1007/978-3-319-06053-8_10](https://doi.org/10.1007/978-3-319-06053-8_10).
- Curvilinear mesh generation for boundary layer problems.
D. Moxey, M. Hazan, S. J. Sherwin and J. Peiró.
IDIHOM: Industrialization of High-Order Methods-A Top-Down Approach, pp. 41–64.
 DOI: [10.1007/978-3-319-12886-3_3](https://doi.org/10.1007/978-3-319-12886-3_3).
- High-order visualization with ELVis.
 J. Peiró, **D. Moxey**, B. Jordi, S. J. Sherwin, B. W. Nelson, R. M. Kirby and R. Haimes.
IDIHOM: Industrialization of High-Order Methods-A Top-Down Approach, pp. 521–534.
 DOI: [10.1007/978-3-319-12886-3_24](https://doi.org/10.1007/978-3-319-12886-3_24).
- Conference Proceedings**
- 2023 [Curvilinear mesh generation for the high-order virtual element method \(VEM\)](#)
 K. Kirilov, J. Peiró, M. Green, **D. Moxey**, L. Beirao da Veiga, F. Dassi and A. Russo.
SIAM International Meshing Roundtable Workshop.
- 2022 [Vectorised spectral/hp element matrix-free operator for anisotropic heat transport in tokamak edge plasma](#)
 B. Liu, C. D. Cantwell, **D. Moxey**, M. Green and S. J. Sherwin.
8th European Congress on Computational Methods in Applied Sciences and Engineering. DOI: [10.23967/eccomas.2022.291](https://doi.org/10.23967/eccomas.2022.291).
- 2019 [Towards a performance-portable high-order implicit flow solver](#)
 J. Eichstädt, **D. Moxey** and J. Peiró.
2019 AIAA Aerospace Sciences Meeting. DOI: [10.2514/6.2019-1404](https://doi.org/10.2514/6.2019-1404).
- [A semi-structured approach to curvilinear mesh generation around streamlined bodies](#)
 J. Marcon, J. Peiró, **D. Moxey**, N. Bergemann, H. Bucklow and M. R. Gammon.
2019 AIAA Aerospace Sciences Meeting. DOI: [10.2514/6.2019-1725](https://doi.org/10.2514/6.2019-1725).
- [Near-Wall Turbulence in a Localized Puff in a Pipe](#)
 A. Yakhot, Y. Feldman, **D. Moxey**, S. J. Sherwin and G. E. Karniadakis.
Progress in Turbulence VIII. Ed. by Ramis Örlü, Alessandro Talamelli, Joachim Peinke and Martin Oberlack, pp. 15–20. ISBN: 978-3-030-22196-6. DOI: [10.1007/978-3-030-22196-6_3](https://doi.org/10.1007/978-3-030-22196-6_3).
- 2018 [High-order curvilinear hybrid mesh generation for CFD simulations](#)
 J. Marcon, M. Turner, J. Peiró, **D. Moxey**, C. R. Pollard, H. Bucklow and M. Gammon.
2018 AIAA Aerospace Sciences Meeting. DOI: [10.2514/6.2018-1403](https://doi.org/10.2514/6.2018-1403).
- 2017 [Towards p-adaptive spectral/hp element methods for modelling industrial flows](#)
D. Moxey, C. D. Cantwell, G. Mengaldo, D. Serson, D. Ekelschot, J. Peiró, S. J. Sherwin and R. M. Kirby.
Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2016, pp. 63–79.
 DOI: [10.1007/978-3-319-65870-4_4](https://doi.org/10.1007/978-3-319-65870-4_4).
- [A framework for the generation of high-order curvilinear hybrid meshes for CFD simulations](#)
 M. Turner, **D. Moxey**, J. Peiró, M. Gammon, C. R. Pollard and H. Bucklow.
Procedia Engineering. Vol. 203, pp. 206–218. DOI: [10.1016/j.proeng.2017.09.808](https://doi.org/10.1016/j.proeng.2017.09.808).
- 2016 [The wing-tip vortex test case](#)
 J.-E. Lombard, **D. Moxey** and S. J. Sherwin.
European Congress on Computational Methods in Applied Sciences and Engineering, Crete, Greece.
- [Automatic generation of 3D unstructured high-order curvilinear meshes](#)
 M. Turner, **D. Moxey**, S. J. Sherwin and J. Peiró.
Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering, pp. 428–433. DOI: [10.7712/100016.1825.8410](https://doi.org/10.7712/100016.1825.8410).

- [A variational framework for high-order mesh generation](#)
M. Turner, J. Peiró and **D. Moxey**.
Procedia Engineering. Vol. 82, pp. 127–135. DOI: [10.1016/j.proeng.2016.11.069](#).
- 2015 [TemPSS: A service providing software parameter templates and profiles for scientific HPC](#)
J. Cohen, C. Cantwell, **D. Moxey**, J. Nowell, P. Austing, X. Guo, J. Darlington and S. J. Sherwin.
IEEE eScience (Munich, Germany). DOI: [10.1109/eScience.2015.43](#).
- [Ensuring an effective user experience when managing and running scientific HPC software](#)
J. Cohen, **D. Moxey**, C. D. Cantwell, P. Austing, J. Darlington and S. J. Sherwin.
2015 IEEE/ACM 1st International Workshop on Software Engineering for High Performance Computing in Science (SE4HPCS), pp. 56–59. DOI: [10.1109/SE4HPCS.2015.16](#).
- [Automatic mesh sizing specification of complex three dimensional domains using an octree structure](#)
M. Turner, **D. Moxey** and J. Peiró.
24th International Meshing Roundtable.
- 2014 [A thermo-elastic analogy for high-order curvilinear meshing with control of mesh validity and quality](#)
D. Moxey, D. Ekelschot, U. Keskin, S. J. Sherwin and J. Peiró.
Procedia Engineering. Vol. 82, pp. 127–135. DOI: [10.1016/j.proeng.2014.10.378](#).
- 2013 [Simplifying the Development, Use and Sustainability of HPC Software](#)
J. Cohen, C. D. Cantwell, N. P. Chue Hong, **D. Moxey**, M. Illingworth, A. Turner, J. Darlington and S. J. Sherwin.
WSSPE13 Workshop, Supercomputing.
- [Nekkloud: A software environment for high-order finite element analysis on clusters and clouds](#)
J. Cohen, **D. Moxey**, C. D. Cantwell, P. Burovskiy, J. Darlington and S. J. Sherwin.
2013 IEEE International Conference on Cluster Computing, pp. 1–5. DOI: [10.1109/cluster.2013.6702616](#).
- 2012 [libHPC: Software sustainability and reuse through metadata preservation](#)
J. Cohen, J. Darlington, B. Fuchs, **D. Moxey**, C. D. Cantwell, P. Burovskiy, S. J. Sherwin and N. P. Chue Hong.
First Workshop on Maintainable Software Practices in e-Science, 8th IEEE International Conference on eScience.

Dissertations

- 2011 [Spatio-temporal dynamics in pipe flow](#)
D. Moxey
Ph.D. thesis. University of Warwick, Oct. 2011.
- 2007 [“Snakes on a plane”: An introduction to the study of polymer chains using Monte Carlo methods](#)
D. Moxey
Master’s thesis. University of Warwick, July 2007.

Teaching

- 2022 – *Engineering Algorithms*, 3rd year Engineering, **King’s College London**
- 2021 – *Thermofluids*, 2nd year Engineering, **King’s College London**
- 2019 – 21 *Year in Industry Programme Leader*, M.Eng. Engineering, **University of Exeter**
- 2017 – 21 *Programming for Engineering*, M.Eng. Engineering, **University of Exeter**
- 2019 – 20 *Advanced CFD*, M.Eng. Engineering, **University of Exeter**
- 2015 – 16 *Fundamentals of Fluids*, M.Sc. Advanced Aerodynamics, **Imperial College London**
- 2015 – 16 *Introductory Mathematics*, M.Sc. Advanced Aerodynamics, **Imperial College London**
- 2008 – 17 *Fundamental Tools*, M.Sc. Financial Mathematics, **University of Warwick**

- 2009 – 11 *Programming for Scientists*, 1st year Mathematics, **University of Warwick**
2008 – 11 *C++ for Financial Mathematics*, M.Sc. Financial Mathematics, **University of Warwick**

Presentations & Conferences

Recent presentations (since 2022)

- 2023 [Committee chair of the SIAM International Meshing Roundtable Workshop](#)
SIAM IMR 2023, **Committee chair**, Amsterdam, Netherlands, Mar. 2023.
- 2022 Numerical and computational performance of spectral element methods for prototype fusion problems
SIAM Conference on Parallel Processing for Scientific Computing, Virtual event, Feb. 2022.
[Paper chair of the SIAM International Meshing Roundtable Workshop](#)
SIAM IMR 2022, **Paper chair**, Virtual event, Feb. 2022.
[Tackling real-world problems with modern software](#)
Interdisciplinary Research Computing Seminar, Imperial College London, London, UK, Jan. 2022.