

Journal and peer-reviewed, indexed conference contributions.

- [1] F. di Mare and W. P. Jones. Large eddy simulation of the vortex shedding process in the near-field wake behind a square cylinder. In *High Performance Computing*, R.J. Allan, M.F. Guest, D.S. Henty, D.A. Nicole and A.D. Simpson Eds., Plenum, London, 439-450, 1998.
- [2] F. di Mare and W.P. Jones. Large Eddy Simulation of rotor-stator interaction in an axial flow turbine. In *West East High Speed Flow Fields: Aerospace applications from high subsonic to hypersonic regime*, D. E. Zeitoun, J. Périaux, J.A. Désidéra and M. Marini Eds., CIMNE, Barcelona, 352-360, 2003.
- [3] F. di Mare, W. P. Jones, and K. R. Menzies. Large Eddy Simulation of a Model Gas Turbine Combustor. *Combustion and Flame*, 137:278–294, 2004, DOI 10.1016/j.combustflame.2004.01.008.
- [4] S. Navarro-Martinez, A. Kronenburg, and F. di Mare. Conditional Moment Closure for Large Eddy Simulation. *Flow, Turbulence and Combustion*, 75:245–274, 2005, DOI 10.1007/s10494-005-8580-7.
- [5] E. V. Klapdor, F. di Mare, W. Kollmann, and J. Janicka. A compressible pressure-based solution algorithm for gas turbine combustion chambers using the PDF/FGM model. *Flow, Turbulence and Combustion*, 91:209-247, 2013, DOI 10.1007/s10494-013-9451-2.
- [6] M. Baumann, F. di Mare, and J. Janicka. On the Validation of Large Eddy Simulation Applied to Internal Combustion Engine Flows Part II: Numerical Analysis. *Flow, Turbulence and Combustion*, 92:299-317, 2014, DOI 10.1007/s10494-013-9472-x.
- [7] F. di Mare, R. Knappstein and M. Baumann. Application of LES-Quality Criteria to Internal Combustion Engine Flows. *Computers and Fluids*, 89:200-213, 2014, DOI 10.1016/j.compfluid.2013.11.003.
- [8] F. di Mare and R. Knappstein. Statistical analysis of the flow characteristics and cyclic variability using Proper Orthogonal Decomposition of highly resolved LES in Internal Combustion Engines. *Computers and Fluids*, 105:101-112, 2014, DOI 10.1016/j.compfluid.2014.09.019.
- [9] M. Kunick, H.-J. Kretzschmar, F. di Mare and U. Gampe. CFD Analysis of steam turbines with the IAPWS standard on the spline-based table look-up method (SBTL) for the fast calculation of real fluid properties, ASME Paper GT2015-43984, Proceedings of ASME Turbo Expo 2015: Turbine Technical Conference and Exposition GT2015, June 15 – 19, 2015, Montreal, Canada, DOI 10.1115/GT2015-43984.
- [10] A. Sadiki, F. di Mare, K. Nishad, C. Hasse, Peter Keller, Stefan Buhl and Frank Hartmann. Internal Combustion Engines, in *ERCOTAC Combustion Best Practice*, Springer, 2015.
- [11] C. Morsbach, M. Franke and F. di Mare. Application of a Low Reynolds Differential Reynolds Stress Model to a Compressor Cascade Tip-Leakage Flow, in *Differential Reynolds Stress Modeling for Separating Flows in Industrial Aerodynamics*, Springer Tracts in Mechanical Engineering, B. Eisfeld ed., Springer, 2015, DOI 10.1007/978-3-319-15639-2_1.
- [12] J. Fiedler, A. Weber, A. Bosco, K. Engel und F. di Mare. Numerical Simulation Of The Flow In The Row Labyrinth Seal Of An Axial Turbine Blade Using A Low-Mach Preconditioning Technique, ASME Paper GT2016-56659, Proceedings of ASME Turbo

- Expo 2016: Turbine Technical Conference and Exposition GT2016, June 13 – 17, 2016, Seoul, South Korea.
- [13] A. Avdic, G. Künne, F. di Mare and J. Janicka. LES combustion modeling using the Eulerian stochastic field method coupled with tabulated chemistry, *Combustion and Flame*, 175:201-219, 2017, DOI 10.1016/j.combustflame.2016.06.015.
 - [14] C. He, W. Leudesdorff, F. di Mare, A. Sadiki, J. Janicka. Analysis of in-cylinder flow field anisotropy in IC-Engine using Large Eddy Simulation, *Flow, Turbulence and Combustion*, 99:535-383, 2017, DOI 10.1007/s10494-017-9812-3
 - [15] A. Hosseinzadeh, A. Sadiki, F. di Mare and J. Janicka. Effects of subgrid scale and combustion modeling on flame structure of a turbulent premixed flame within LES and tabulated chemistry framework, *Combustion Theory and Modelling*, 21:838-863, 2017, DOI 10.1080/13647830.2017.1305514
 - [16] F. Cavalcanti Miranda, F. di Mare, A. Sadiki and J. Janicka. Performance analysis of different solvers for computing the radiative transfer equation in complex geometries using finite volume method and block structured grids, *Computational Thermal Sciences*, 9:269-282, 2017, DOI 10.1615/ComputThermalScien.2017019001
 - [17] S. A. Doost , A. Sadiki, S. Aguerbi, M. Chrigui, R. Knappstein, A. Massmeyer, D. Zabrodiec, J. Hees, R. Kneer, F. di Mare and J. Janicka. Analyzing the effects of turbulence and multiphase treatments on oxy-coal combustion process predictions using LES and RANS, *Chemical Engineering Science*, 166:283-302, 2017, doi.org/10.1016/j.ces.2017.03.015.
 - [18] T. Klenke, F. Lo Presti, K. Lackhove, F. di Mare, A. Sadiki and J. Janicka. Two-Way hybrid LES/CAA Approach including acoustic feedback loop for the Prediction of Thermoacoustic Instabilities in technical Combustors, ASME Paper GT2017-63271, Proceedings of ASME Turbo Expo 2017: Turbine Technical Conference and Exposition GT2017, June 26 – 30, 2017, Charlotte, North Carolina, USA.
 - [19] L. Voigt, J. Heinze, T. Aumeier, T. Behrendt and F. di Mare. Quantitative Co Plif Measurements in Aeroengine Gas Turbine Combustion Chambers Under Realistic Conditions, ASME Paper ASME GT2017-63413, Proceedings of ASME Turbo Expo 2017: Turbine Technical Conference and Exposition GT2017, June 26 – 30, 2017, Charlotte, North Carolina, USA.
 - [20] E. Yildar, G. Kuenne, C. He, R. Schiessl, M.-S. Benzinger, M. Neurohr, F. di Mare, A. Sadiki and J. Janicka, Understanding the Influences of Thermal and Mixture Inhomogeneities on the Auto-Ignition Process in a Controlled Auto-Ignition (CAI) Engine Using LES, *Oil & Gas Science and Technology - Rev. IFP Energies nouvelles*, 72(6), 2017, doi.org/10.2516/ogst/2017025.
 - [21] C. He, G. Kuenne, E. Yildar, J. van Oijen, F. di Mare, A. Sadiki, C.-P. Ding, E. Baum, B. Peterson, B. Böhm and J. Janicka, Evaluation of the flame propagation within an SI engine using flame imaging and LES, *Combustion Theory and Modelling*, 21(6) :1080-1113, 2017, 10.1080/13647830.2017.1343498
 - [22] M. Kniefs, M. Lange, R. Mailach, S. Iseni, D. Micallef, F. di Mare. The Influence Of Circumferential Grooves On The Flutter Stability Of A Transonic Fan, ASME Paper ASME GT2018-76422, Proceedings of ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition GT2018, June 11 – 15, 2018, Oslo, Norway.
 - [23] M. Sinkwitz, B. Winhart, D. Engelmann, F. di Mare, R. Mailach, On The Periodically Unsteady Interaction Of Wakes, Secondary Flow Development And Boundary Layer

- Flow In An Annular LPT Cascade. Part 1 Experimental Investigation, ASME Paper ASME GT2018-76802, Proceedings of ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition GT2018, June 11 – 15, 2018, Oslo, Norway.
- [24] B. Winhart, M. Sinkwitz, D. Engelmann, F. di Mare, R. Mailach, On The Periodically Unsteady Interaction Of Wakes, Secondary Flow Development And Boundary Layer Flow In An Annular LPT Cascade. Part 2 Numerical Investigation, ASME Paper ASME GT2018-76873, Proceedings of ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition GT2018, June 11 – 15, 2018, Oslo, Norway.
 - [25] R. Knappstein, G. Kuenne, L. G. Becker, F. di Mare, A. Sadiki, A. Dreizler, J. Janicka, Large Eddy Simulation of a Novel Gas-Assisted Coal Combustion Chamber, Flow, Turbulence and Combustion, 2018, DOI 10.1007/s10494-018-9910-x
 - [26] R. Knappstein, G. Kuenne, H. Nicolai, F. di Mare, A. Sadiki, J. Janicka, Description of the char conversion process in coal combustion based on premixed FGM chemistry, Fuel, 2018, DOI doi.org/10.1016/j.fuel.2018.08.158
 - [27] M. Sinkwitz, B. Winhart, D. Engelmann, F. di Mare, R. Mailach, Experimental and Numerical Investigation of Secondary Flow Structures in an Annular LPT Cascade under Periodical Wake Impact – Part 1: Experimental Results, ASME Journal of Turbomachinery, 2018, DOI 10.1115/1.4042284
 - [28] B. Winhart, M. Sinkwitz, A. Schramm, D. Engelmann, F. di Mare, R. Mailach, Experimental and Numerical Investigation of Secondary Flow Structures in an Annular LPT Cascade under Periodical Wake Impact – Part 2: Numerical Results, ASME Journal of Turbomachinery, 2018, doi:10.1115/1.4042283
 - [29] S. Iseni, D. Micallef, D. Engelmann, R. Mailach, E. Nicke, F. di Mare, Influence of casing contouring on flutter boundaries of a jet engine fan, CEAS Aeronautical Journal, 2018, doi.org/10.1007/s13272-018-0351-y
 - [30] A. Krumme, C. Buske, J. R. Bachner, J. Dähnert, M. Tegeler, S. Gövert, F. Ferraro, F. Kocian, F. di Mare. Investigation of combustor-turbine-interaction in a rotating cooled transonic high-pressure turbine test rig - part I: experimental results, ASME Paper GT2019-90733, Proceedings of ASME Turbo Expo 2019: Turbine Technical Conference and Exposition GT2019, June 17 – 21, 2019, Phoenix, Arizona, USA.
 - [31] S. Gövert, F. Ferraro, A. Krumme, C. Buske, M. Tegeler, F. Kocian, F. di Mare. Investigation of combustor-turbine-interaction in a rotating cooled transonic high-pressure turbine test rig - part II: numerical modelling and simulation, ASME Paper GT2019-90736, Proceedings of ASME Turbo Expo 2019: Turbine Technical Conference and Exposition GT2019, June 17 – 21, 2019, Phoenix, Arizona, USA.
 - [32] T. Soworka, T. Behrendt, C. Hassa, J. Heinze, E. Magens, M. Schroll, F. di Mare, S. Ballantyne, J. Gregory. Experimental investigation of a RQL burner with jet in crossflow fuel injection – Characterization of the reacting flow field at realistic operating conditions, ASME Paper GT2019-91244, Proceedings of ASME Turbo Expo 2019: Turbine Technical Conference and Exposition GT2019, June 17 – 21, 2019, Phoenix, Arizona, USA.
 - [33] P. Post, M. Sembritzky, F. di Mare. Towards scale resolving computations of condensing wet steam flows, ASME Paper GT2019-91269, Proceedings of ASME Turbo Expo 2019: Turbine Technical Conference and Exposition GT2019, June 17 – 21, 2019, Phoenix, Arizona, USA.

- [34] F. Cavalcanti Miranda, J. Janicka, F. di Mare, P. Cohelo. Study of turbulence-radiation interactions in large-eddy simulation of scaled Sandia flame D, *Journal of Quantitative Spectroscopy and Radiative Transfer*, doi.org/10.1016/j.jqsrt.2019.02.010, 2019.
- [35] D. Jesch, A. Bevrnja, F. di Mare, J. Janicka & A. Sadiki, Large eddy simulation of a turbulent flame using tabulated chemistry with a novel multivariate PDF, *Int. J. of Computational Fluid Dynamics*, doi.org/10.1080/10618562.2019.1640359, 2019
- [36] P. Post, B. Winhart, F. di Mare. Large eddy simulation of a condensing wet steam turbine cascade, ASME Paper GT2020-16064, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [37] S. Iseni, M. R. Guru, A. Hartmaier, K. Holeczek, N. Modeler, F. di Mare. Micro-, macromechanical and aeroelastic investigation of carbon-fiber based, lightweight turbomachinery components, ASME Paper GT2020-14951, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [38] B. Winhart, M. Sinkwitz, A. Schramm, P. Post, F. di Mare. Large eddy simulation of periodic wake impact on boundary layer transition mechanisms on a highly loaded low-pressure turbine blade, ASME Paper GT2020-14555, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [39] R. E. Karaefe, P. Post, A. Schramm, M. Kunick, U. Gampe, F. di Mare. Numerical investigation of a centrifugal compressor for supercritical CO₂ cycles, ASME Paper GT2020-15194, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [40] M. Sinkwitz, B. Winhart, D. Engelmann, F. di Mare. Time-resolved measurements of the unsteady boundary layer in an annular low-pressure turbine configuration with perturbed inlet, ASME Paper GT2020-15319, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [41] K. Ziaja, P. Post, M. Sembritzky, A. Schramm, O. Willers, H. Kunte, J. Seume, F. di Mare. Numerical investigation of a partially loaded supersonic orc turbine stage, ASME Paper GT2020-15219, *Proceedings of ASME Turbo Expo 2020: Turbine Technical Conference and Exposition GT2020*, June 22 – 26, 2020, London, UK.
- [42] H. Nicolai, T. Li, C. Geschwindner, F. di Mare, C. Hasse, B. Boehm, J. Janicka: Numerical investigation of pulverized coal particle group combustion using tabulated chemistry, *Proceedings of the Combustion Institute*, 2020, ISSN 1540-7489, doi.org/10.1016/j.proci.2020.06.081.
- [43] H. Nicolai, G. Kuenne, R. Knappstein, H. Schneider, L.G. Becker, C. Hasse, F. di Mare, A. Dreizler, J. Janicka, Large Eddy Simulation of a laboratory-scale gas-assisted pulverized coal combustion chamber under oxy-fuel atmospheres using tabulated chemistry, *Fuel*, Volume 272, 2020, <https://doi.org/10.1016/j.fuel.2020.117683>.
- [44] P. Post, B. Winhart, F. di Mare. Large eddy simulation of a condensing wet steam turbine cascade *J. Eng. Gas Turbines Power*. Feb 2021, 143(2): 021016 (9 pages), <https://doi.org/10.1115/1.4049348>.
- [45] K. Ziaja, P. Post, M. Sembritzky, A. Schramm, O. Willers, H. Kunte, J. R. Seume and F. di Mare, Numerical Investigation of a Partially Loaded Supersonic Organic Rankine

- Cycle Turbine Stage." *ASME. J. Eng. Gas Turbines Power*. June 2021; 143(6): 061014. <https://doi.org/10.1115/1.4049207>.
- [46] F. Lo Presti, M. Sembritzky, B. Winhart, P. Post, F. di Mare, A. Wiedermann, J. Greving, and R. Krewinkel, Numerical Investigation of Unsteady Combustor Turbine Interaction for Flexible Power Generation, *ASME. J. Turbomach.* February 2022; 144(2): 021003. <https://doi.org/10.1115/1.4052137>.
 - [47] H. Nicolai, X. Wen, F. C. Miranda, D. Zabrodiec, A. Maßmeyer, F. di Mare, A. Dreizler, C. Hasse, R. Kneer, J. Janicka, Numerical Investigation of Swirl-Stabilized Pulverized Coal Flames in Air and Oxy-Fuel Atmospheres by Means of Large Eddy Simulation Coupled with Tabulated Chemistry, *Fuel* (2021) 119429 <https://doi.org/10.1016/j.fuel.2020.119429>.
 - [48] D. Engelmann, M. Sinkwitz, F. di Mare, B. Koppe, R. Mailach, J. Ventosa-Molina, J. Fröhlich, T. Schubert, R. Niehuis, Near-Wall Flow in Turbomachinery Cascades—Results of a German Collaborative Project. *Int. J. Turbomach. Propuls. Power* 2021, 6, 9. <https://doi.org/10.3390/ijtpp6020009>.
 - [49] P. Farmand, H. Nicolai, C. Schumann, A. Attili, L. Berger, T. Li, C. Geschwindner, F. di Mare, C. Hasse, B. Böhm, J. Janicka, H. Pitsch, Numerical investigation and assessment of flamelet-based models for the prediction of pulverized solid fuel homogeneous ignition and combustion, *Combustion and Flame*, 235, 2022, 111693, <https://doi.org/10.1016/j.combustflame.2021.111693>.
 - [50] R. Dreiling, S. Zimmermann, T. Nguyen-Xuan, P. Schreivogel, F. di Mare, Thermal resistance modeling of flat plate pulsating heat pipes, *International Journal of Heat and Mass Transfer*, Volume 189, 2022, 122668, <https://doi.org/10.1016/j.ijheatmasstransfer.2022.122668>.
 - [51] R. Dreiling, V. Dubois, S. Zimmermann, T. Nguyen-Xuan, P. Schreivogel, F. di Mare, Numerical investigation of slug flow in pulsating heat pipes using an interface capturing approach, *International Journal of Heat and Mass Transfer*, Volume 199, 2022, 123459, <https://doi.org/10.1016/j.ijheatmasstransfer.2022.123459>.
 - [52] R. Dreiling, S. Zimmermann, T. Nguyen-Xuan, P. Schreivogel and F. di Mare. Thermal Management based on Flat-Plate Pulsating Heat Pipes for Power Modules of Electric Powertrains. 2022 IEEE Transportation Electrification Conference & Expo (ITEC) (2022): 819-824, <https://doi.org/10.1109/ITEC53557.2022.9813801>.
 - [53] M. Sinkwitz, B. Winhart, D. Engelmann, F. di Mare, Time-Resolved Measurements of the Unsteady Boundary Layer in an Annular Low-Pressure Turbine Configuration with Perturbed Inlet. *ASME. J. Turbomach.* January 2022; 144(1): 011001. <https://doi.org/10.1115/1.4051711>.
 - [54] P. Post, B. Winhart, F. di Mare, Investigation of Physics-Informed Neural Networks Based Solution Techniques for Internal Flows. *Proceedings of the ASME Turbo Expo 2022: Turbomachinery Technical Conference and Exposition*. Volume 10C: Turbomachinery — Design Methods and CFD Modeling for Turbomachinery; Ducts, Noise, and Component Interactions. Rotterdam, Netherlands. June 13–17, 2022. V10CT32A011. ASME. <https://doi.org/10.1115/GT2022-80960>.
 - [55] F. von Gosen, B. Winhart, F. di Mare, Unsteady Rotor-Stator Interaction in a Four-Stage Axial Turbine: An Experimental Investigation. *Proceedings of the ASME Turbo Expo*

- 2022: *Turbomachinery Technical Conference and Exposition. Volume 10D: Turbomachinery — Multidisciplinary Design Approaches, Optimization, and Uncertainty Quantification; Turbomachinery General Interest; Unsteady Flows in Turbomachinery*. Rotterdam, Netherlands. June 13–17, 2022. V10DT37A009. ASME. <https://doi.org/10.1115/GT2022-80399>.
- [56] R. E. Karaefe, P. Post, F. di Mare, V. Venzik, P. Wotzka, D. Müller, and R. B. Barta, On Integrated Fluid Screening and Turbomachinery Design for Optimized Industrial Heat Pumps. *Proceedings of the ASME Turbo Expo 2022: Turbomachinery Technical Conference and Exposition. Volume 4: Cycle Innovations; Cycle Innovations: Energy Storage*. Rotterdam, Netherlands. June 13–17, 2022. V004T06A004. ASME. <https://doi.org/10.1115/GT2022-79404>.
- [57] Kienzle, N, Hoang, DHM, Martis, WJ, Moch, M, Doetsch, C, & di Mare, F. "Centrifugal Compressor Retrofit: Geometry Rebuild and 3-D Blade Shape Optimization." *Proceedings of the ASME Turbo Expo 2022: Turbomachinery Technical Conference and Exposition. Volume 10B: Turbomachinery — Axial Flow Turbine Aerodynamics; Deposition, Erosion, Fouling, and Icing; Radial Turbomachinery Aerodynamics*. Rotterdam, Netherlands. June 13–17, 2022. V10BT35A017. ASME. <https://doi.org/10.1115/GT2022-84204>.
- [58] C. Drygala, B. Winhart, F. di Mare, H. Gottschalk; Generative modeling of turbulence. *Physics of Fluids* 1 March 2022; 34 (3): 035114. <https://doi.org/10.1063/5.0082562>.
- [59] N. Geissler, F. Garsche, F. di Mare, R. Bracke, Overview and comprehensive performance description of a new Micro Turbine Drilling – MTD technology for drilling laterals into hard reservoir rock, *International Journal of Rock Mechanics and Mining Sciences*, Volume 161, 2023, 105253, <https://doi.org/10.1016/j.ijrmms.2022.105253>.
- [60] L. Schuchard, M. Bień, K. Ziája, N. Ianken, J. Göing, J. Friedrichs, F. di Mare, B. Ponick and R. Mailach, A Study on Quantities Driving Maintenance, Repair, and Overhaul for Hybrid-Electric Aeroengines. *Proceedings of the ASME Turbo Expo 2023: Turbomachinery Technical Conference and Exposition. Volume 1: Aircraft Engine*. Boston, Massachusetts, USA. June 26–30, 2023. V001T01A009. ASME. <https://doi.org/10.1115/GT2023-100915>.
- [61] W. Sadowski, M. Sayyari, F. di Mare, H. Marschall; Large eddy simulation of flow in porous media: Analysis of the commutation error of the double-averaged equations. *Physics of Fluids* 1 May 2023; 35 (5): 055121. <https://doi.org/10.1063/5.0148130>
- [62] W. Sadowski, M. Sayyari, F. di Mare, Large-eddy simulation of a channel flow over an irregular porous matrix. *Proceedings in Applied Mathematics and Mechanics*, 23, e202300095, 2023, <https://doi.org/10.1002/pamm.202300095>.
- [63] W. Sadowski, F. di Mare, Investigation of the porous drag and permeability at the porous-fluid interface: Influence of the filtering parameters on Darcy closure, *Particuology*, Volume 78, 2023, Pages 122-135, <https://doi.org/10.1016/j.partic.2022.09.010>.
- [64] R. Dreiling, S. Zimmermann, M. Reibstirn, T. Nguyen-Xuan, P. Schreivogel, F. di Mare, Experimental operating range evaluation of flat-plate pulsating heat pipes for high-heat

flux automotive power electronics cooling, *Applied Thermal Engineering*, Volume 226, 2023, 120338, <https://doi.org/10.1016/j.applthermaleng.2023.120338>.

- [65] L. Schuchard, M. Bień, K. Ziąja, N. Ianken, J. Göing, J. Friedrichs, F. di Mare, B. Ponick and R. Mailach, "A Study on Quantities Driving Maintenance, Repair, and Overhaul for Hybrid-Electric Aeroengines." *ASME. J. Eng. Gas Turbines Power*. February 2024; 146(2): 021013. <https://doi.org/10.1115/1.4063580>.
- [66] Wojciech Sadowski, Mohammed Sayyari, Francesca di Mare, Christin Velten, Katharina Zähringer; Particle-resolved simulations and measurements of the flow through a uniform packed bed. *Physics of Fluids* 1 February 2024; 36 (2): 023330. <https://doi.org/10.1063/5.0188247>.
- [67] N. Geissler, F. Garsche, V. Samus, B. Polat, F. Di Mare and R. Bracke, Proof of Concept in a Full-Scale Field Test for the Novel Micro-Turbine Drilling Technology from a Cased Borehole in Granite Rock *SPE J.* 29 (2024): 1386–1394, <https://doi.org/10.2118/218378-PA>.

Reviewed Conference Contributions

- [68] F. di Mare and W.P. Jones. Large Eddy Simulation of a turbulent partially premixed piloted flame (Sandia flame D). In *Proceedings of the ECCOMAS 2001 CFD Conference*, Swansea, Wales, Great Britain, September 2001.
- [69] F. di Mare, D. Goryntsev, and J Janicka. LES of the flow in a DISI engine: analysis of turbulent scalar-velocity correlations. In *Proceedings of the LES4ICE conference*, Paris, France, November 2010.
- [70] B. Böhm, F. di Mare, and A. Dreizler. Characterisation of cyclic variability in an optically accessible IC Engine by means of phase-independent POD. In *Proceedings of the LES4ICE conference*, Paris, France, November 2010.
- [71] M. Baumann, F. di Mare and J. Janicka. Large Eddy Simulation of the Flow in IC Engines: effects of numerical and modeling errors on the prediction of cyclic variability. In *Proceedings of the ETMM9 Conference*, Tessaaloniki, Greece, June 2012.
- [72] J. Fiedler and F. di Mare. Generalised Low-Mach preconditioning for arbitrary three-dimensional geometries. In *Proceedings of the ECCOMAS 2012 CFD Conference*, Wien, Austria, September 2012.
- [73] C. Morsbach and F. di Mare. Conservative segregated solution method for turbulence equations in compressible flows. In *Proceedings of the ECCOMAS 2012 CFD Conference*, Wien, Austria, September 2012.
- [74] C. Morsbach, M. Franke and F. di Mare. Towards the application of Reynolds stress transport models to 3D turbomachinery flows. In *Proceedings of the 7th International Symposium on Turbulence, Heat and Mass Transfer*, Palermo, Italy, September 2012.
- [75] M. Baumann, F. di Mare and J. Janicka. Analysis of cyclic variability in IC engines by means of detailed comparisons of highly-resolved experimental and numerical data. In

Proceedings of the 7th International Symposium on Turbulence, Heat and Mass Transfer, Palermo, Italy, September 2012.

- [76] M. Kunick, F. di Mare. Continuous spline functions for the computation of thermodynamic properties of non-ideal fluids in advanced three-dimensional CFD applications. *16th International IAPWS Conference*, University of Greenwich, Greenwich, London, United Kingdom, September 2013.
- [77] J. Biele, S. Ulamec, E. Kührt, F. Sohl, H. Hausmann, F. di Mare, M. Kunick. The role of thermophysical data on ices of astrophysical interest and water in general in aerospace research, *16th International IAPWS Conference*, University of Greenwich, Greenwich, London, United Kingdom, September 2013.
- [78] C. Morsbach, M. Franke and F. di Mare. Evaluation of a differential Reynolds-stress model incorporating near-wall effects in a compressor cascade tip-leakage flow. In *Proceedings of the ECCOMAS 2014 CFD Conference*, Barcelona, Spain, July 2014.
- [79] J. Fiedler and F. di Mare. Low-Mach preconditioned boundary conditions for compressible solvers. In *Proceedings of the ECCOMAS 2014 CFD Conference*, Barcelona, Spain, July 2014.
- [80] F. di Mare and L. di Mare, An implicit, density-based algorithm for coupled simulations of arbitrary gas mixtures. *SIAM NC15, International Conference on Numerical Combustion*, Avignon, France, April 2015.
- [81] M. Kunick, H.-J. Kretzschmar, F. di Mare and U. Gampe, Fast Calculation of Real Fluid Properties with the New IAPWS Standard on the Spline-Based Table Look-Up Method (SBTL) and its Application in CFD, ISROMAC, Honolulu, Hawaii, USA, April 2016.
- [82] P. Post and F. di Mare. Development of a highly efficient density-based solver for condensing steam flows in turbomachines, GPPF-2017-113 *Proceedings of the first Global Power and Propulsion Forum*, January 16 – 18, 2017, Zurich, Switzerland.
- [83] L. di Mare, F. Wang, F. Ferraro and F. di Mare. Numerical Simulation of shock/flame interaction in air/ethylene. *European Combustion Meeting (ECM) 2017*, April 18-21, 2017, Dubrovnik, Croatia.
- [84] L. di Mare, F. Wang, F. Ferraro and F. di Mare. Fully-implicit density-based algorithms for simulations of arbitrary gas mixtures. *26th ICDERS 2017*, July 30-August 4, 2017, Boston, USA.
- [85] M. Sinkwitz, B. Winhart, D. Engelmann, F. di Mare, R. Mailach. Experimental and Numerical Investigation of Secondary Flow Structures in an Annular LPT Cascade under Periodically Wake Impact – Part 1: Experimental Results, ISROMAC, Honolulu, Hawaii, USA, December 2017.
- [86] B. Winhart, M. Sinkwitz, A. Schramm, D. Engelmann, F. di Mare, R. Mailach. Experimental and Numerical Investigation of Secondary Flow Structures in an Annular

LPT Cascade under Periodically Wake Impact – Part 2: Numerical Results, ISROMAC, Honolulu, Hawaii, USA, December 2017.

- [87] O. Hodzic, M. Sinkwitz, A. Schramm, S. Iseni, D. Engelmann, F. di Mare and R. Mailach. Design of a low pressure turbine stage with control stage characteristics for investigations of partial admission effects, 17th International Symposium on Transport Phenomena and Dynamics of Rotating Machinery (ISROMAC), December 16-21, 2017, Maui, Hawaii, USA.
- [88] J. Kowalski, M. Lauer, D. Engelmann, R. Mailach, M. Cagna and F. di Mare. Development of a Novel Test Rig to Investigate Explosion Safety in Gas Turbine Enclosures, 17th International Symposium on Transport Phenomena and Dynamics of Rotating Machinery (ISROMAC), December 16-21, 2017, Maui, USA.
- [89] S. Iseni, D. Micallef, D. Engelmann, R. Mailach, E. Nicke, F. di Mare, Influence of casing contouring on flutter boundaries of a jet engine fan, Deutscher Luft- und Raumfahrtkongress 2017, München, September 2017.
- [90] O. Hodzic, F. di Mare, D. Engelmann, R. Mailach. Experimental and numerical investigations of a low-pressure turbine control stage, GPPS-2018-98, Proceedings of GPPS Forum 18, Global Power and Propulsion Society, Montreal, 7th-9th May 2018.
- [91] P. Post, F. di Mare. Highly efficient Euler-Euler approach for condensing steam flows in turbomachines, GPPS-NA-2018-106, Proceedings of GPPS Forum 18, Global Power and Propulsion Society, Montreal, 7th-9th May 2018.
- [92] S. Iseni, D. Micallef, F. di Mare. Sensitivity analysis of eigenmode variations on the flutter stability of a highly loaded transonic fan, GPPS-NA-2018-XX, Proceedings of GPPS Forum 18, Global Power and Propulsion Society, Montreal, 7th-9th May 2018.
- [93] P. Post, F. di Mare. Highly efficient Euler-Euler approach with source-term tabulation for condensing wet steam flows, Proceedings of the 2nd International Workshop on non-ideal compressible fluid dynamics (NICFD2018), Bochum, Germany, 4th-5th October, 2018.
- [94] S. Iseni, D. Micallef, F. di Mare. A fully coupled FSI approach for flutter and forced response prediction, ISABE Paper 2019-24324, ISABE Conference, 22nd-27th September, 2019, Canberra, Australia.
- [95] M. Sinkwitz, D. Engelmann, F. di Mare, R. Mailach. The effects of blade profile and end wall boundary layer development on secondary flow in an annular LPT cascade, ISABE Paper 2019-24446, ISABE Conference, 22nd-27th September, 2019, Canberra, Australia.
- [96] J. Kowalski, F. di Mare, S. Theis, A. Wiedermann, M. Lange, R. Mailach. Investigation of the ventilation flow in a gas turbine package enclosure, ETC Paper ETC2019-438, ETC13, 13th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, 8th-12th, April, 2019, Lausanne, Switzerland.
- [97] N. Kienzle, M. Wäsker, F. di Mare, C. Dötsch. A method for matching compressor stage characteristics to a given load profile by operating point weighting, ETC Paper ETC2019-

- 307, ETC13, 13th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, 8th-12th, April, 2019, Lausanne, Switzerland.
- [98] F. Lo Presti, F. di Mare. Two-way hybrid LES/CAA approach with time domain impedance boundary conditions. International Conference on Numerical Combustion, Aachen, Germany, 6th-8th, May, 2019.
- [99] F. Lo Presti, F. di Mare, F. Ferraro. A study on Combustor-Turbine interaction with a density based solver for combustion, 29. Deutscher Flammentag, Bochum, Germany, 17th-18th September, 2019.
- [100] S. Iseni, P. Post, M. Sembritzky, F. di Mare. Numerical analysis of the influence of air humidity on a transonic compressor stage, Proceedings of the IGTC 2019 Conference, 17th-22nd November, 2019, Tokyo, Japan.
- [101] B. Winhart, F. von Gosen, F. di Mare. Unsteady Flow Phenomena in a Shrouded Four Stage Axial Air Turbine, Proceedings of the IGTC 2019 Conference, 17th-22nd November, 2019, Tokyo, Japan.
- [102] P. Post, B. Winhart, F. di Mare. Large eddy simulation of a condensing flow in a steam turbine cascade, Proceedings of the IGTC 2019 Conference, 17th-22nd November, 2019, Tokyo, Japan.
- [103] K. Ziaja, P. Post, M. Sembritzky, A. Schramm, O. Willers, H. Kunte, J. Seume, F. di Mare, Numerical investigation of loss mechanisms in a partially loaded supersonic orc turbine stage, NICFD2020, Delft, The Netherlands, 29th-30th October, 2020.
- [104] R. E. Karaefe, M. Kunick, P. Post, M. Sembritzky, A. Schramm, F. di Mare, U. Gampe, Extended abstract: numerical investigation of a supercritical CO₂ centrifugal compressor with an in-house density based compressible CFD solver, NICFD2020, Delft, The Netherlands, 29th-30th October, 2020.
- [105] F. Lo Presti, P. Post, F. di Mare, J. van Oijen, Numerical characterization of premixed methane flames in vitiated atmosphere at supercritical conditions, NICFD2020, Delft, The Netherlands, 29th-30th October, 2020.
- [106] R. E. Karaefe, P. Post, M. Sembritzky, A. Schramm, F. di Mare, M. Kunick, U. Gampe, Numerical analysis of a centrifugal compressor operating with supercritical CO₂, Paper n. 2021-sCO₂.eu-132, Proceedings of The 4th European sCO₂ Conference for Energy Systems, March 22-26, 2021, Prague, Czech Republic.
- [107] N. Kienzle, D.H.M. Hoang, M. Waesker, B. Buelten, F. di Mare, C. Doetsch, Influence of Fillet Radii on the Flow and Strength Behavior of a Shrouded Centrifugal Compressor Impeller, ETC2021-638
- [108] W. Sadowski, F. Lo Presti and F. di Mare, Assessment of hybrid turbulence models for the simulation of ribbed channel with heat transfer, 15th European Conference on Turbomachinery Fluid dynamics & Thermodynamics, 24-28 April 2023 - Budapest, Hungary, ETC2023-312, <https://doi.org/10.29008/ETC2023-312>

- [109] W. Sadowski, M. Sayyari, F. di Mare, Large-eddy simulation of a channel flow over an irregular porous matrix, GAMM Annual Meeting 2023, 30 May – 2nd June 2023, TU Dresden
- [110] J. Voigt, L. Wein, C. Werner-Spatz, J. Ståding, F. di Mare, J. Friedrichs, J. R. Seume, MRO of current and future engine technologies – climate impact, economic potential, and scientific challenges, DGLR-Kongress, 20-21 September 2023, Stuttgart

Books and book chapters

- [111] P. Post, F. di Mare, Non-Ideal Compressible-Fluid Dynamics for Propulsion and Power, F. Di Mare, A. Spinelli, M. Pini, Eds., Springer Lecture Notes in Engineering, ISBN 978-3-030-49625-8, 2020.
- [112] R. E. Karaefe, M. Kunick, P. Post, M. Sembritzky, A. Schramm, F. di Mare, U. Gampe, Extended abstract: numerical investigation of a supercritical CO₂ centrifugal compressor with an in-house density based compressible CFD solver, M. Pini, C. De Servi, A. Spinelli, F. di Mare, A. Guardone Eds., ERCOFTAC Series, ISBN 978-3-030-69305-3, 2021.
- [113] F. Lo Presti, P. Post, F. di Mare, J. van Oijen, Numerical characterization of premixed methane flames in vitiated atmosphere at supercritical conditions, M. Pini, C. De Servi, A. Spinelli, F. di Mare, A. Guardone Eds., ERCOFTAC Series, ISBN 978-3-030-69305-3, 2021.

Other Publications

- [114] F. di Mare and W.P. Jones. LES of Sandia flame D. In *TNF4*, Darmstadt, Germany, June 1999. Proceedings available from <http://www.ca.sandia.gov/tdf/>.
- [115] F. di Mare, W. P. Jones, and A. J. Marquis. *LES-BOFFIN: Users's Guide*, 2002.
- [116] F. di Mare. Radiative heat transfer: an overview. Technical report, Department of Mechanical Engineering, Imperial College, London, 2002.
- [117] F. di Mare. Large Eddy Simulation of Reacting and non-Reacting Flows, Ph. D. Thesis, Imperial College, London, 2002.
- [118] M. Kunick, F. di Mare and H.-J. Kretzschmar, IAPWS Guideline on the Fast Calculation of Water and Steam Properties in Computational Fluid Dynamics Using Spline Interpolation. Meeting of the German Section of the International Association for the Properties of Water and Steam IAPWS, Siemens AG, Energy Sector, Erlangen, Germany, March 2013.
- [119] M. Kunick, H.-J. Kretzschmar, F. di Mare and U. Gampe, Fast Calculation of Thermodynamic Properties of Water and Steam Using a Spline Based Table Look-up Method, Symposium on Thermophysical Properties for Technical Thermodynamics, Universität Rostock, Germany, March 2013.
- [120] H.-J. Kretzschmar, M. Kunick, J. Hruby, M. Duška, V. Vinš, F. di Mare and A. Singh, Proposal for an IAPWS Guideline on the Fast Calculation of Steam and Water Properties

- in Computational Fluid Dynamics Using Spline Interpolation, *16th International IAPWS Conference*, University of Greenwich, Greenwich, London, United Kingdom, September 2013.
- [121] M. Kunick, H.-J. Kretzschmar, F. di Mare and U. Gampe, Schnelle Stoffwertberechnung mit Spline-Interpolation für numerische Strömungssimulationen und die Berechnung instationärer Prozesse, *Thermodynamik Kolloquium*, TU-Hamburg-Harburg, Hamburg, Germany, October 2013.
- [122] F. di Mare and J. Janicka, Predictive CFD and Virtual Test Rigs: perspective and challenges, *TNF12*, Pleasanton, CA, USA, July 2014. Proceedings available from <http://www.ca.sandia.gov/tdf/>.
- [123] F. di Mare and A. Dreizler, Modelling and Simulation of Flame-Wall Interaction: new challenges and opportunities, *TNF12*, Pleasanton, CA, USA, July 2014. Proceedings available from <http://www.ca.sandia.gov/tdf/>.
- [124] F. di Mare and P. Post, Large eddy simulation of condensing steam in a turbine cascade. 2016 IAPWS Meeting, Technische Universität Dresden, Dresden, Germany, September 2016.
- [125] M. Kunick, H.-J. Kretzschmar, F. di Mare and U. Gampe, Neue IAPWS-Richtlinie zur schnellen und genauen Berechnung thermophysikalischer Stoffeigenschaften in numerischen Prozesssimulationen, *Thermodynamik-Kolloquium 2016*, Technische Universität Kaiserslautern, Kaiserslautern, Germany, October 2016.
- [126] Dreiling, R., Zimmermann, S., Nguyen-Xuan, T., Schreivogel, P., Di Mare, F., Thermal Management based on Flat-Plate Pulsating Heat Pipes for Power Modules of Electric Powertrains. In 2022 IEEE Transportation Electrification Conference Expo (ITEC) (pp. 819-824). IEEE.