ACCESS Publication List (03-05-2022)

[1] A. Martin, I. Cozmuta, M. Wright and I. Boyd, "Kinetic Rates for Gas-Phase Chemistry of Phenolic-Based Carbon Ablator in Atmospheric Air," *Journal of Thermophysics and Heat Transfer,* vol. 29, pp. 222-240, 2015.

[2] A. Sahai, C. O. Johnson, B. Lopez and M. Panesi, "Flow-Radiation Coupling in CO2 Hypersonic Wakes Using Reduced-Order Non-Boltzmann Models," *Physical Review Fluids,* vol. 4, p. 093401, 2019.

[3] Y. Liu, M. Panesi, A. Sahaiu and M. Vinokur, "General Multi-Group Macroscopic Modeling for Thermo-Chemical Non-equilibrium Gas Mixtures," *Journal of Chemical Physics,* vol. 142, p. 134109, 2015.

[4] K. Miki, M. Panesi, E. Prudencio and S. Prudhomme, "Estimation of the nitrogen ionization reaction rate using electric arc shock tube data and Bayesian model analysis," *Physics of Plasmas,* vol. 19, 2012.

[5] M. Panesi, R. Jaffe, D. Schwenke and E. Magin, "Rovibrational internal energy transfer and dissociation of N2?N system in hypersonic flows," *Journal of Chemical Physics,* vol. 138, p. 44312, 2013.

[6] R. Macdonald, R. Jaffe, D. Schwenke and M. panesi, "Construction of a coarse-grain quasi-classical trajectory method. I. Theory and application to N2-N2 system," *Journal of Chemical Physics,* vol. 148, 2018.

[7] R. Macdonald, M. Grover, T. Schwartzentruber and M. Panesi, "State-to-state and direct molecular simulation study of energy transfer and dissociation in nitrogen mixtures," in *AIAA Aerospace Sciences Meeting*, 2018.

[8] K. Heritier, R. Jaffe, V. Laporta and M. Panesi, "Energy transfer models in nitrogen plasmas: Analysis of N2 (X1∑g+) - N (4S) - E - interaction," *Journal of Chemical Physics,* vol. 141, 2014.

[9] K. Heritier, R. Jaffe, V. Laporta and M. Panesi, "Energy transfer models in nitrogen plasmas: Analysis of N2(1 Sigma+ g) - N(4Su)-e interaction," *Journal of Chemical Physics,* vol. 141, p. 184302, 2014.

[10] B. Jiang and H. Guo, "Permutation invariant polynomial neural network approach to fitting potential energy surfaces," *Journal of Chemical Physics,* vol. 139, p. 54112, 2013.

[11] J. Li, H. Jiang and H. Guo, "Permutation invariant polynomial neural network approach to fitting potential energy surfaces. II. Four-atom systems," *Journal of Chemical Physics,* vol. 139, p. 204103, 2013.

[12] B. Jiang, J. Li and H. Guo, "High-fidelity potential energy surfaces for gas phase and gas-surface scattering processes from machine learning," *Journal of Physical Chemistry Letters,* vol. 11, pp. 5120-5131, 2020.

[13] Y. Guan, H. Guo and D. Yarkony, "Neural network based quasi-diabatic Hamiltonians with symmetry adaptation and a correct description of conical intersections," *Journal of Chemical Physics,* vol. 150, p. 21401, 2019.

[14] Y. Guan, H. Guo and D. Yarkony, "Extending the representation of multistate coupled potential energy surfaces to include properties operators using neural networks: Application to the 1,21A states of ammonia," *Journal Chemical Theoretical Computations,* vol. 16, pp. 302-313, 2020.

[15] J. Kim and I. Boyd, "State-resolved master equation analysis of thermochemical nonequilibrium of nitrogen," *Chemical Physics,* vol. 415, pp. 237-246, 2013.

[16] P. Valenti, T. Schwartzentruber, J. Bender, I. Nompelis and G. Candler, "Direct molecular simulation of nitrogen dissociation based on an ab initio potential energy surface," *Physics of Fluids,* vol. 27, 2015.

[17] T. Schwartzentruber, M. Grover and P. Valentini, "Direct Molecular Simulation of Nonequilibrium Dilute Gases," *Journal of Thermophysics and Heat Transfer,* vol. 32, pp. 892-903, 2018.

[18] R. Macdonald, E. Torres, T. Schwartzentruber and M. Panesi, "State-to-State Master Equation and Direct Molecular Simulation Study of Energy Transfer and Dissociation for the N2–N System," *Journal of Physical Chemistry A,* vol. 124, pp. 6986-7000, 2020.

[19] A. Sahai, B. Lopez, C. Johnston and M. Panesi, "Adaptive coarse graining method for energy transfer and dissociation kinetics of polyatomic species," *Journal of Chemical Physics,* vol. 147, 2017.

[20] Y. Liu, M. Panesi, A. Sahai and M. Vinokur, "General multi-group macroscopic modeling for thermo-chemical non-equilibrium gas mixtures," *Journal of Chemical Physics,* vol. 142, 2015.

[21] A. Munafo, N. Mansour and M. Panesi, "A Reduced-order NLTE Kinetic Model for Radiating Plasmas of Outer Envelopes of Stellar Atmospheres," *Astrophysics Journal,* vol. 838, 2017.

[22] A. Munafo, Y. Liu and M. Panesi, "Physical models for dissociation and energy transfer in shock-heated nitrogen flows," *Physics of Fluids,* vol. 27, p. 127101, 2015.

[23] C. Johnston and M. Panesi, "Impact of state-specific flowfield modeling on atomic nitrogen radiation," *Physical Review Fluids,* vol. 3, 2018.

[24] A. Sahai, C. Johnston, B. Lopez and M. Panesi, "Flow-radiation coupling in CO2 hypersonic wakes using reduced-order non-Boltzmann models," *Physical Review Fluids,* vol. 4, p. 93401, 2019.

[26] R. Chaudhry, I. Boyd and G. Candler, "Vehicle-Scale Simulations of Hypersonic Flows using the MMT Chemical Kinetics Model," in *AIAA AVIATION Forum*, 2020.

[27] C. Johnston, A. Sahai and M. Panesi, "Extension of multiband opacity-binning to molecular, non-Boltzmann shock layer radiation," *Journal of Thermophysics and Heat Transfer,* vol. 32, 2018.

[28] A. Sahai, C. Johnston, B. Lopez and M. Panesi, "Comparative analysis of reduced-order spectral models and grouping strategies for non-equilibrium radiation," *Journal of Quantitative Spectroscopy and Radiation Transfer,* vol. 242, p. 106752, 2020.

[29] K. Miki, M. Panesi and S. Prudhomme, "Systematic validation of non-equilibrium thermochemical models using Bayesian inference," *Journal of Computational Physics,* vol. 298, 2015.

[30] M. Panesi, K. Miki, S. Prudhomme and A. Brandis, "On the assessment of a Bayesian validation methodology for data reduction models relevant to shock tube experiments," *Computational Methods in Applied Mechanical Engineering,* pp. 213-216, 2012.

[31] A. Munafo, A. Alberti, C. Pantano, J. Freund and M. Panesi, "A computational model for nanosecond pulse laser-plasma interactions," *Journal of Computational Physics,* vol. 406, p. 109190, 2020.

[32] A. Sahai, N. Mansour, B. Lopez and M. Panesi, "Modeling of high pressure arc-discharge with a fully-implicit Navier-Stokes stabilized finite element flow solver," *Plasma Sources Science and Technology,* vol. 26, 2017.

[33] D. Chandel, I. Nompelis and G. Candler, "Numerical Simulations of Shock Propagation Under Strong Nonequilibrium Conditions," *Journal of Thermophysics and Heat Transfer,* vol. 34, pp. 556-569, 2020.

[34] V. Murray, P. Recio, A. Caracciolo, C. Miossec, N. Balucani, P. Casavecchia and T. Minton, "Oxidation and nitridation of vitreous carbon at high temperatures," *Carbon,* vol. 167, pp. 388-402, 2020.

[35] T. Prata, T. Schwartzentruber and T. Minton, "Air-Carbon Ablation Model for Hypersonic Flight from Molecular Beam Data," *ChemRixiv,* 2020.

[36] S. Poovathingal, T. Schwartzentruber, V. Murray and T. Minton, "Molecular simulations of surface ablation using reaction probabilities from molecular beam experiments and realistic microstructure," in *53rd AIAA Aerospace Sciences Meeting*, 2018.

[37] B. Bessire and T. Minton, "Decomposition of Phenolic Impregnated Carbon Ablator (PICA) as a Function of Temperature and Heating Rate," *ACS Applied Materials Interfaces,* vol. 9, pp. 21422-21437, 2017.

[38] S. Chen, I. Boyd, N. Martin and D. Fletcher, "Modeling of Emission Spectra in Nonequilibrium Plasmas for Testing Pyrolyzing Ablators," *Journal of Thermophysics and Heat Transfer,* vol. 33, pp. 907-916, 2019.

[39] A. Borner, -G. K. Swaminathan, K. Stephani, V. Murray, S. Poovathingal, T. Minton, F. Panerai and N. Mansour, "Detailed DSMC surface chemistry modeling of the oxidation of light-weight carbon preform ablators," in *47th AIAA Thermophysics Conference*, 2017.

[40] T. Pan, T. Wilson and K. Stephani, "Vibrational state-specific model for dissociation and recombination of the O2 (3 g-) + O (3P) system in DSMC," *Journal of Chemical Physics,* 2019.

[41] J. Ferguson, F. Panerai, A. Borner and N. Mansour, "PuMA: the Porous Microstructure Analysis software," *SoftwareX,* vol. 7, pp. 81-87, 2018.

[42] K. Swaminathan-Gopalan, A. Borner, V. Murray, S. Poovathingal, T. Minton, N. Mansour and K. Stephani, "Development and validation of a finite-rate model for carbon oxidation by atomic oxygen," *Carbon,* vol. 137, pp. 313-332, 2018.

[43] J. Brock, P. Subbareddy and G. Candler, "Detached-Eddy Simulations of Hypersonic Capsule Wake Flow," *AIAA Journal,* vol. 53, pp. 70-80, 2015.

[44] S. Ganju, W. van Noort, M. McGilvray, L. Di Mare and C. Brehm, "Progress in the Development of an Immersed Boundary Viscous-Wall Model for 3D and High-Speed Flows," in *AIAA SCITECH Forum*, 2021.

[45] C. Brehm, O. Browne and N. Ashton, "Towards a Viscous Wall Model for Immersed Boundary Methods," in *AIAA Aerospace Sciences Meeting*, 2018.

[47] M. MacLean, E. Mundy, T. Wadhams, M. Holden, M. Barnhardt and G. Cander, "Experimental and Numerical Study of Laminar and Turbulent Base Flow on a Spherical Capsule," in *47th AIAA Aerospace Sciences Meeting*, January 2009.

[49] G. V. Candler, H. B. Johnson, I. Nompelis, P. K. Subbareddy, T. W. Drayna, V. Gidzak and M. D. Barnhardt, "Development of the US3D Code for Advanced Compressible and Reacting Flow Simulations," in *AIAA Paper 2015-1893*, January 2015.

[50] H. Weng, S. Bailey and A. Martin, "Numerical Study of Iso-Q Sample Geometric Effects on Charring Ablative Materials," *International Journal of Heat and Mass Transfer,* vol. 80, pp. 570-596, 2015.

[51] H. Weng, U. Duzel, R. Fu and A. Martin, "Geometric Effects on Charring Ablator: Modeling of the Full-scale Stardust Heat Shield," *Journal of Spacecraft and Rockets,* vol. In Press, 2020.

[52] H. Weng and A. Martin, "Multidimensional Modeling of Pyrolysis Gas Transport Inside Charring Ablative Materials," *Journal of Thermophysics and Heat Transfer,* vol. 28, pp. 583-597, 2014.

[53] H. Weng and A. Martin, "Numerical Investigation of Thermal Response Using Orthotropic Charring Ablative Material," *Journal of Thermophysics and Heat Transfer,* vol. 29, pp. 429-438, 2015.

[54] R. Fu, H. Weng, J. Wenk and A. Martin, "Thermo-mechanical Coupling for Charring Ablators," *Journal of Thermophysics and Heat Transfer,* vol. 32, pp. 369-379, 2018.

[55] R. Fu and H. Weng, "Thermal Expansion for Charring Ablative Materials," *Journal of Thermophysics and Heat Transfer,* vol. 34, pp. 57-65, 2020.

[56] A. Martin and M. Panesi, "Radiative Transmission and Absorption Within the Thermal Protection System of Hypersonic Vehicle," in *AIAA Paper 2020-3276*, June 2020.

[57] R. Chaudhry, I. Boyd, E. Torres, T. Schwartzentruber and G. Candler, "Implementation of a Chemical Kinetics Model for Hypersonic Flows in Air for High-Performance CFD," in *AIAA Paper 2020-2191*, January 2020.

[58] A. Sahai, B. Lopez, C. Johnston and M. Panesi, "Novel Approach for CO2 State-to-state Modeling and Application to Multidimensional Entry Flows," in *AIAA Paper 2017-0213*, January 2017.

[59] J. Nichols and G. Candler, "Input-Output Analysis of Complex Hypersonic Boundary Layers," in *AIAA Paper 2019-1383*, January 2019.

[60] O. Schroeder, J. Brock, E. Stern and G. Candler, "A Coupled Ablation Approach Using Icarus and US3D," in *AIAA SCITECH Forum*, 2021.

[61] S. Fu, S. McDaniel, M. Beck and A. Martin, "Crack Modeling in Charring Ablation Materials," in *AIAA SCITECH Forum*, January 2021.

[62] J. Cooper, O. Schroeder, H. Weng and A. Martin, "Implementation and Verification of a Surface Recession Module in a Finite Volume Ablation Solver," in *AIAA Paper 2018-3272*, June 2018.

[63] R. Fu and A. Martin, "Hinge Method for Immersed Boundary Problems and Micro-Scale Carbon Fiber Material Response," in *AIAA Paper 2020-0482*, January 2020.

[64] C. Setters, R. Fu and A. Martin, "Modeling Thin Layers of Materials in the Kentucky Aero-Thermal Solver Material Response Module," in *AIAA Paper 2019-3130*, June 2019.

[65] R. Davuluri, H. Zhang and A. Martin, "Numerical Study of Spallation Phenomenon in an Arc-jet Environment," *Journal of Thermophysics and Heat Transfer,* vol. 30, pp. 32-41, 2016.

[66] R. Davuluri, S. Bailey, K. Tagavi and A. Martin, "A Drag Coefficient Model for Lagrangian Particle Dynamics Relevant to High-Speed Flows," *International Journal of Heat and Fluid Flow,* vol. In Press, 2020.

[67] B. Cockburn, G. Karniadakis and C. Shu, Discontinuous Galerkin Methods: Theory, Computation and Applications, Spring, 2012.

[68] J. Peraire, N. Nguyen and B. Cockburn, "A Hybridizable Discontinuous Galerkin Method for the Compressible Euler and Navier-Stokes Equations," in *AIAA Paper 2010-0363*, January 2010.

[69] B. Cockburn, M. Luskin, C. Shu and E. Suli, "Enhanced Accuracy for Finite Element Methods for Hyperbolic Equations," *Mathematics of Computation,* vol. 72, pp. 577-606, 2003.

[70] M. Benitez and B. Cockburn, "Post-Processing for Spatial Accuracy-Enhancement of Pure Lagrange-Galerkin Schemes Applied to Convection-Diffusion Equations," *IMA Journal of Numerical Analysis,* 2020.

[71] G. Candler, P. Subbareddy and I. Nompelis, "Decoupled Implicit Method for Aerothermo-dynamics and Reacting Flows," *AIAA Journal,* vol. 51, pp. 1245-1254, 2013.

[72] H. Weng and A. Martin, "Modeling FiberForm Oxidation in a Flow Tube using a Universal Solver," in *57th AIAA Aerospace Sciences Meeting*, 2019.

[73] U. Duzel and A. Martin, "Modeling High Velocity Flow Through Porous Media," in *AIAA SCITECH Forum*, 2020.

[74] A. Martin and e. al, "Numerical and experimental analysis of spallation phenomena," *CEAS Space Journal,* vol. 8, pp. 229-236, 2016.

[75] A. Martin and I. Boyd, "Non-Darcian behavior of pyrolysis gas in a thermal protection system," *Journal of Thermophysics and Heat Transfer,* vol. 24, pp. 60-68, 2010.

[76] R. Fu, H. Weng, J. Senk and A. Martin, "Development of a coupled elastic solver for ablation problems," in *55th AIAA Aerospace Sciences Meeting*, 2017.

[77] R. Fu, C. Setters, J. Rogers, H. Weng and A. Martin, "Sensitivity analysis in material response for ablation problem," in *48th AIAA Thermophysics Conference*, 2019.

[78] R. Fu, J. Rogers, S. McDaniel, J. Wenk and A. Martin, "Numerical investigation of nonlinear structural responses in ablation problem," in *48th AIAA Thermophysics Conference*, 2019.

[79] D. Dang, E. Stern and I. Boyd, "Quasi-steady thermoelastic modeling of woven thermal protection systems," in *AIAA SCITECH Forum*, 2020.

[80] F. Panerai, J. White, T. Cochell, O. Schroeder, N. Mansour, M. Wright and A. Martin, "Experimental measurements of the permeability of fibrous carbon at high temperature," *International Journal of Heat and Mass Transfer,* vol. 101, pp. 267-273, 2016.

[81] F. Torres-Herrador, J. Meurisse, F. Panerai, J. Blondeau, J. Lachaud, B. Bessire, T. Magin and N. Mansour, "A high heating rate pyrolysis model for the Phenolic Impregnated Carbon Ablator (PICA) based on mass spectroscopy experiments," *Journal of Analytical and Applied Pyrolysis,* vol. 141, p. 104625, 2019.

[82] F. Torres-Herrador, J. Coheur, F. Panerai, T. Magin, M. Arnst, N. Mansour and J. Blondeau, "Competitive kinetic model for the pyrolysis of the Phenolic Impregnated Carbon Ablator," *Aerospace Science and Technology,* vol. 100, p. 105784, 2020.

[84] F. Panerai, A. Martin, N. Mansour, S. Sepka and J. Lachaud, "Flow-tube oxidation experiments on the carbon preform of a phenolic-impregnated carbon ablator," *Journal of Thermophysics and Heat Transfer,* vol. 27, pp. 181-190, 2014.

[85] F. Paneria, T. Cochell, A. Martin and J. White, "Experimental measurements of the high-temperature oxidation of carbon fibers," *International Journal of Heat and Mass Transfer,* vol. 136, pp. 972-986, 2019.

[86] S. Poovathingal, T. Schwartzentruber, V. Murray, T. Minton and G. Candler, "Finite-rate oxidation model for carbon surfaces from molecular beam experiments," *AIAA Journal,* vol. 55, pp. 1644-1658, 2017.

[87] K. Swaminathan-Gopalan, A. Borner, K. Stephani, V. Murray, S. Poovathingal, T. MInton and N. Mansour, "DSMC analysis of molecular beam experiments for oxidation of carbon based ablators," in *55th AIAA Aerospace Sciences Meeting*, 2017.

[88] S. Poovathingal, E. Stern, I. Nompelis, T. Schwartzentruber and G. Candler, "Nonequilibrium flow through porous thermal protection materials, part ii: Oxidation and pyrolysis," *Journal of Computational Physics,* vol. 380, pp. 427-441, 2018.

[89] J. Sparks and A. Martin, "Overview of the first test-flight of the Kentucky Re-entry Universal Payload System (KRUPS)," in *56th AIAA Aerospace Sciences Meeting*, 2018.

[90] J. Sparks, G. Myers, E. Whitmer, J. Nichols, C. Dietz, N. Khouri, S. Smith and A. Martin, "Overview of the second test-flight of the Kentucky Re-entry Universal Payload System (KRUPS)," in *AIAA Thermophysics Conference*, 2018.

[91] R. Jambunathan, D. Levin, A. Borner, J. Ferguson and F. Panerai, "Prediction of gas transport properties through fibrous carbon preform microstructures using direct simulation monte carlo," *International Journal of Heat and Mass Transfer,* vol. 130, pp. 923-937, 2019.

[92] J. Ferguson, F. Panerai, J. Lachaud and N. Mansour, "Theoretical study on the micro-scale oxidation of resin-infused carbon ablators," *Carbon,* vol. 121, pp. 552-562, 2017.

[93] F. Panerai, J. Ferguson, J. Lachaud, A. Martin, M. Gasch and N. Mansour, "Micro-tomography based analysis of thermal conductivity, diffusivity and oxidation be- havior of rigid and flexible fibrous insulators," *International Journal of Heat and Mass Transfer,* vol. 108, pp. 801-811, 2017.

[94] J. Ferguson, F. Panerai, S. Bailey, J. Lachaud, A. Martin and N. Mansour, "Modeling the oxidation of low-density carbon fiber material based on micro-tomography," *Carbon,* vol. 96, pp. 57-65, 2016.

[95] H. Chen, Y. Xu, Y. Jiao and Y. Liu, "A novel discrete computational tool for microstructure- sensitive mechanical analysis of composite materials," *Materials Science and Engineering,* vol. 659, pp. 234-241, 2016.

[96] H. Chen, Y. Jiao and Y. Liu, "An integrated computational framework for microstructure-sensitive materials modeling," in *AIAA SCITECH Forum*, 2019.

[97] H. Bale, A. Haboub, A. MacDowell, J. Nasiatka, D. C. B. Parkinson, D. Marshall and R. Ritchie, "Real-time quantitative imaging of failure events in materials under load at temperatures above 1,600 C," *Nature Materials,* vol. 12, pp. 40-46, 2013.

[98] A. Borern, F. Panerai and N. Mansour, "High temperature permeability of fibrous materials using direct simulation monte carlo," *International Journal of Heat and Mass Transfer,* vol. 106, pp. 1318-1326, 2017.

[99] M. Ho, S. Leclaire, J.-Y. Trepanier, M. Reggio and A. Martin, "Permeability calculation of a fibrous thermal insulator using the lattice boltzmann method," *Journal of Thermophysics and Heat Transfer,* p. In Press, 2020.

[100] H. Chen, L. Meng, S. Chen, Y. Jiao and Y. Liu, "A novel discrete computational tool for microstructure- sensitive mechanical analysis of composite materials," *Materials Science and Engineering,* vol. 659, pp. 234-241, 2016.

[102] P. Rostkowski, S. Venturi, M. Panesi, A. Omidy, H. Weng and A. Martin, "Calibration and uncertainty quantification of ViSTA ablator material database using Bayesian inference," *Journal of Thermophysics and Heat Transfer,* vol. 33, 2019.

[103] F. Panerai, J. Ferguson, J. Lachaud, A. Martin, M. Gasch and N. Mansour, "Micro-tomography based analysis of thermal conductivity, diffusivity and oxidation be- havior of rigid and flexible fibrous insulators," *International Journal of Heat and Mass Transfer,* vol. 108, pp. 801-811, 2017.

[104] A. Banerjee and S. Poovathingal, "Investigation of in-depth penetration of radiative heating in thermal protection system (TPS)," in *59th AIAA Aerospace Sciences Meeting*, 2021.

[105] R. Fu, S. Ramjatan, M. Kroells, T. Schwartzentruber and A. Martin, "Micro-scale thermal-structural modeling for carbon fibers," in *49th AIAA Thermophysics Conference*, 2020.

[106] T. Cochell, J. Grana-Otero, R. Unocic and A. Martin, "Nanoscale oxidation behavior of carbon fibers revealed with in situ gas cell stem," *engrXiv,* 2020.

[107] A. Doostan and H. Owhadi, "A Non-Adapted Sparse Approximation of PDEs with Stochastic Inputs," *Journal of Computational Physics,* vol. 230, pp. 3015-3034, 2011.

[108] J. Peng, J. Hampton and A. Doostan, "A Weighted L1-Minimization Approach for Sparse Polynomial Chaos Expansions," *Journal of Computational Physics,* vol. 267, pp. 92-111, 2014.

[109] J. Hampton and A. Doostan, "Compressive sampling of polynomial Chaos Expansions: Convergence Analysis and Sampling Strategies," *Journal of Computational Physics,* vol. 280, pp. 363-386, 2015.

[110] B. Jones, N. Parrish and A. Doostan, "Postmaneuver collision probability estimation using sparse polynomial chaos expansions," *Journal of Guidance, Control, and Dynamics,* vol. 38, pp. 1425-1437, 2015.

[111] A. Doostan, G. Geraci and G. Iaccarino, "A Bi-Fidelity Approach for Uncertainty Quantification of Heat Transfer in a Rectangular Ribbed Channel," in *Turbo Expo: Power for Land, Sea, and Air*, American Society of Mechanical Engineer, 2016.

[112] J. Hampton, H. Fairbanks, A. Narayan and A. Doostan, "Practical Error Bounds for a Non-Intrusive Bi-Fidelity Approach to Parametric/Stochastic Model Reduction," *Journal of Computational Physics,* vol. 368, pp. 315-332, 2018.

[113] R. Skinner, A. Doostan, E. Peters, J. Evans and K. Jansen, "Reduced-Basis Multifidelity Approach for Efficient Parametric Study of NACA Airfoils," *AIAA Journal,* vol. 57, pp. 1481-1491, 2019.

[114] H. R. Fairbanks, L. Jofre, G. Geraci, G. Iaccarino and A. Doostan, "Bi-Fidelity Approximation for Uncertainty Quantification and Sensitivity Analysis of Irradiated Particle-Laden Turbulence," *Journak of Computational Physics,* vol. 402, p. 108996, 2020.

[115] H. Fairbanks, A. Doostan, C. Ketelsen and G. Iaccarino, "A Low-Rank Control Variate for Multilevel Monte Carlo Simulation of High-Dimensional Uncertain Systems," *Journal of Computational Physics,* vol. 341, pp. 121-139, 2017.

[116] M. Hadigol, K. Maute and A. Doostan, "On Uncertainty Quantification of Lithium-Ion Batteries: Application to an LiC6/LiCoO2 Cell," *Journal of Power Sources,* vol. 300, pp. 507-524, 2015.

[117] J. Hampton and A. Doostan, "Basis Adaptive Sample Efficient Polynomial Chaos (BASE-PC)," *Journal of Computational Physics,* vol. 371, pp. 20-49, 2018.

[118] M.L. Da Silva and J. Beck, "Contribution of CO2 IR Radiation to Martian Entries Radiative Wall Fluxes," in AIAA Aerospace Sciences Meeting, 2011.

[119] J.F. Vargas, B. Lopez, M. Panesi, and M.L. Da Silva, "Refitting of Detailed CO2 IR Databases to Vibrationally Specific Databases Tailored for Aerothermodynamics Flows," in AIAA Joint Thermophysics Conference, 2018.

[120] P. Collen, L. Doherty, S. Subiah, A. Hyslop, and M. McGilvray, "Performance Capability Experiments in T6: A Hypervelocity, Transient and Multi-Mode Ground Test Facility for High-Enthalpy Aerothermodynamics Research," in International Conference on Flight vehicles, Aerothermodynamics and Re-entry Missions and Engineering, Monopoli, Italy, September-October 2019.

[121] P. Collen, L. Doherty, and M. McGilvray, "Measurements of Radiating Hypervelocity Air Shock Layers in the T6 Free-Piston Driven Shock Tube," in International Conference on Flight vehicles, Aerothermodynamics and Re-entry Missions and Engineering, Monopoli, Italy, September-October 2019.