JOURNAL ARTICLES

AEROSPACE ENGINEERING

1. Kumar G., Lakshmanan S.K., Gopalan H., De A., Investigation of the sensitivity of turbulent closures and coupling of hybrid RANS-LES models for predicting flow fields with separation and reattachment, International Journal for Numerical Methods in Fluids, Vol. 83, 917-939 (2017).

2. Balamurugan G., Mandal A.C., Experiments on localized secondary instability in bypass boundary layer transition, Journal of Fluid Mechanics, Vol. 817, 217-263 (2017).

3. Naspoori S.K., Kammara K.K., Kumar R., Study of crater formation and its characteristics due to impact of a cluster projectile on a metal surface by molecular dynamics approach, Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, Vol. 396, 34-42 (2017).

4. Singh G., Kumar D., Mohite P.M., Damage modelling of epoxy material under uniaxial tension based on micromechanics and experimental analysis, Archive of Applied Mechanics, Vol. 87, 721-736 (2017).

5. Sakthivel T., Venkatesan C., Rotorcraft control response using linearised and non-linear flight dynamic models with different inflow models, Aeronautical Journal, Vol. 121, 553-575 (2017).

6. Watanabe Y., Suzuki K., Rathakrishnan E., Aerodynamic characteristics of breathing blunt nose configuration at hypersonic speeds, Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, Vol. 231, 840-858 (2017).

7. Berrueta T., Rathakrishnan E., Control of Subsonic and Sonic Jets with Limiting Tabs, International Journal of Turbo and Jet Engines, Vol. 34, 103-113 (2017).
8. Kotteda V.M.K., Mittal S., Flow in a planar convergent–divergent nozzle, Shock Waves, Vol. 27, 441-455 (2017).

9. Mittal S., The critical mass phenomenon in vortex-induced vibration at low Re, Journal of Fluid Mechanics, Vol. 820, 159-186 (2017).

10. Suman V.K., Sengupta T.K., Jyothi Durga Prasad C., Surya Mohan K., Sanwalia D., Spectral analysis of finite difference schemes for convection diffusion equation, Computers and Fluids, Vol. 150, 95-114 (2017).

11. Nayak A., Das D., Transient growth of optimal perturbation in a decaying channel flow, Physics of Fluids, Vol. 29, - (2017).

12. Aravindh Kumar S.M., Rathakrishnan E., Elliptic jet control with triangular tab, Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, Vol. 231, 1460-1477 (2017).

13. Sivaramakrishnan Malathi A., Kushari A., Influence of various design parameters and unsteady flow on the fluid–structure interaction of a lightly cambered blade in a cascade, Aerospace Science and Technology, Vol. 65, 117-132 (2017).

14. Olmstead D., Wayne P., Yoo J.-H., Kumar S., Truman C.R., Vorobieff P., Experimental study of shock-accelerated inclined heavy gas cylinder, Experiments in Fluids, Vol. 58, - (2017).

15. Kothari M., Manathara J.G., Postlethwaite I., Cooperative Multiple Pursuers against a Single Evader, Journal of Intelligent and Robotic Systems: Theory and Applications, Vol. 86, 551-567 (2017).

16. Malaikannan G., Kumar R., Hybrid particle–particle numerical algorithm for high speed non-equilibrium flows, Computers and Fluids, Vol. 152, 24-39 (2017).

17. Ezhil Kumar P.K., Mishra D.P., Numerical study of reacting flow characteristics of a 2D twin cavity trapped vortex combustor, Combustion Theory and Modelling, Vol. 21, 658-676 (2017).

18. Awadhiya A., Kumar D., Rathore K., Fatma B., Verma V., Synthesis and characterization of agarose–bacterial cellulose biodegradable composites, Polymer Bulletin, Vol. 74, 2887-2903 (2017).

19. Sangwan J., Sengupta T.K., Suchandra P., Investigation of compressibility effects on dynamic stall of pitching airfoil, Physics of Fluids, Vol. 29, - (2017).

20. Ezhil Kumar P.K., Mishra D.P., Combustion Characteristics of a Two-Dimensional Twin Cavity Trapped Vortex Combustor, Journal of Engineering for Gas Turbines and Power, Vol. 139, - (2017).

21. Sengupta T.K., Sengupta A., Saurabh K., Global spectral analysis of multi-level time integration schemes: Numerical properties for error analysis, Applied Mathematics and Computation, Vol. 304, 41-57 (2017).

22. Lestandi L., Bhaumik S., Avatar G.R.K.C., Azaiez M., Sengupta T.K., Multiple Hopf bifurcations and flow dynamics inside a 2D singular lid driven cavity, Computers and Fluids, Vol. 166, 86-103 (2018).

23. Ezhil Kumar P.K., Mishra D.P., Characteristics of Turbulent Flow Past Passive Rectangular Cavity at Large Reynolds Numbers, Journal of The Institution of Engineers (India): Series C, Vol. 99, 223-232 (2018).

24. Harpale A., Sawant S., Kumar R., Levin D., Chew H.B., Ablative thermal protection systems: Pyrolysis modeling by scale-bridging molecular dynamics, Carbon, Vol. 130, 315-324 (2018).

25. Sen A., Sahoo S.R., Kothari M., Nonlinear formation control strategies for agents without relative measurements under heterogeneous networks, International Journal of Robust and Nonlinear Control, Vol. 28, 1653-1671 (2018).

26. Maruthupandiyan K., Rathakrishnan E., Corrugated Shifted Limiting Tabs' Effectiveness on Supersonic Jet Mixing, Journal of Aerospace Engineering, Vol. 31, - (2018).

27. Maruthupandiyan K., Rathakrishnan E., Supersonic jet control with shifted tabs, Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, Vol. 232, 433-447 (2018).

28. Dubey A., Jangir H., Pandey M., Dubey M.M., Verma S., Roy M., Singh S.K., Philip D., Sarkar S., Das M., An eco-friendly, low-power charge storage device from bio-tolerable nano cerium oxide electrodes for bioelectrical and biomedical applications, Biomedical Physics and Engineering Express, Vol. 4, - (2018).

29. Jithin M., Kumar N., De A., Das M.K., Pore-Scale Simulation of Shear Thinning Fluid Flow Using Lattice Boltzmann Method, Transport in Porous Media, Vol. 121, 753-782 (2018).

30. Sharma A.P., Khan S.H., Kitey R., Parameswaran V., Effect of through thickness metal layer distribution on the low velocity impact response of fiber metal laminates, Polymer Testing, Vol. 65, 301-312 (2018).

31. Chinnappan A.K., Malaikannan G., Kumar R., Insights into flow and heat transfer aspects of hypersonic rarefied flow over a blunt body with aerospike using direct simulation Monte-Carlo approach, Aerospace Science and Technology, Vol. 66, 119-128 (2017).

32. Malaikannan G., Kumar R., Chinnappan A.K., A novel efficient hybrid DSMC–dynamic collision limiter algorithm for multiscale transitional flows, International Journal for Numerical Methods in Fluids, Vol. 86, 565-581 (2018).

33. Bhaumik S., Sengupta T.K., Impulse response and spatio-temporal wave-packets: The common feature of rogue waves, tsunami, and transition to turbulence, Physics of Fluids, Vol. 29, - (2017).

34. Singh S.S., Kitey R., Effect of interface profile and incident wave characteristics on aluminum/epoxy dynamic adhesion strength, International Journal of Adhesion and Adhesives, Vol. 79, 8-17 (2017).

35. Bharadwaj K.K., Das D., Global instability analysis and experiments on buoyant plumes, Journal of Fluid Mechanics, Vol. 832, 97-145 (2017).

36. Kumar R., Chinnappan A.K., Development of a multi-species, parallel, 3D Direct Simulation Monte-Carlo solver for rarefied gas flows, Computers and Fluids, Vol. 159, 204-216 (2017).

37. Chandra Sekar T., Agarwal R., Mandal A.C., Kushari A., Behavior of an aeroelastic system beyond critical point of instability, Physics of Fluids, Vol. 29, - (2017).

38. Sengupta T.K., Sagaut P., Sengupta A., Saurabh K., Global spectral analysis of three-time level integration schemes: Focusing phenomenon, Computers and Fluids, Vol. 157, 182-195 (2017).

39. Sharma N., Sengupta A., Rajpoot M., Samuel R.J., Sengupta T.K., Hybrid sixth order spatial discretization scheme for non-uniform Cartesian grids, Computers and Fluids, Vol. 157, 208-231 (2017).

40. Bajpai A., Rathakrishnan E., Tab Geometry Effect on Supersonic Elliptic Jet Control, International Journal of Turbo and Jet Engines, Vol. 34, 395-408 (2017).

41. Keerthi M.C., Kushari A., Somasundaram V., Experimental Study of Suction Flow Control Effectiveness in a Serpentine Intake, Journal of Fluids Engineering, Transactions of the ASME, Vol. 139, - (2017).

42. Aravindh Kumar S.M., Rathakrishnan E., Nozzle Aspect Ratio Effect on Supersonic Elliptic Jet Mixing, Journal of Fluids Engineering, Transactions of the ASME, Vol. 139, - (2017).

43. Kumar S., Navrose, Mittal S., Response to "Comment on 'Lock-in in forced vibration of a circular cylinder'" [Phys. Fluids 29, 109101 (2017)], Physics of Fluids, Vol. 29, - (2017).

44. Aravindh Kumar S.M., Rathakrishnan E., Control of Elliptic Supersonic Jet of Aspect Ratio 3, Journal of Aerospace Engineering, Vol. 30, - (2017).

45. Sen A., Sahoo S.R., Kothari M., Cooperative Target-centric Formation Control without Relative Velocity Measurements under Heterogeneous Networks, Journal of Intelligent and Robotic Systems: Theory and Applications, Vol. 87, 683-698 (2017).

46. Saini R., De A., Assessment of soot formation models in lifted ethylene/air turbulent diffusion flame, Thermal Science and Engineering Progress, Vol. 3, 49-61 (2017).

47. Akram S., Rathakrishnan E., Control of Supersonic Elliptic Jet with Ventilated Tabs, International Journal of Turbo and Jet Engines, Vol. , - (2017).

48. Srinivasarao T., Murthy I.D., Lovaraju P., Rathakrishnan E., Effect of Inner Nozzle Lip Thickness on Co-flow Jet Characteristics, International Journal of Turbo and Jet Engines, Vol. 34, 287-293 (2017).

49. Sengupta A., Sengupta T.K., Sengupta S., Mudkavi V., Effects of error on the onset and evolution of Rayleigh–Taylor instability, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Vol. 135, 233-239 (2018).

50. Babu K.P., Mohite P.M., Upadhyay C.S., Development of an RVE and its stiffness predictions based on mathematical homogenization theory for short fibre composites, International Journal of Solids and Structures, Vol. 130-131, 80-104 (2018).

51. Bajpai A., Rathakrishnan E., Control of a supersonic elliptical jet, Aeronautical Journal, Vol. 122, 131-147 (2018).

52. Sengupta T.K., DNS of turbulence from receptivity stage: Role of spatio-temporal wave front, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Vol. 135, 41-53 (2018).

53. Mishra A., Lakshmanan S.K., De A., Effect of leading-edge tubercle on aerodynamic performance of NACA 0021 airfoil, Lecture Notes in Mechanical Engineering, Vol. , 163-170 (2018).

54. Bagade P., Sengupta T.K., Effects of free stream turbulence on a three-dimensional transitional flow, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Vol. 135, 81-87 (2018).

55. Soni R.K., De A., Investigation of mixing characteristics in strut injectors using modal decomposition, Physics of Fluids, Vol. 30, - (2018).

56. Gupta A., Nadkarni-Ghosh S., Sharma I., Rings of non-spherical, axisymmetric bodies, Icarus, Vol. 299, 97-116 (2018).

57. Shrivastava S., Mohite P.M., Yadav T., Malagaudanavar A., Multi-objective multi-laminate design and optimization of a Carbon Fibre Composite wing torsion box using evolutionary algorithm, Composite Structures, Vol. 185, 132-147 (2018).

58. Khechai A., Tati A., Guerira B., Guettala A., Mohite P.M., Strength degradation and stress analysis of composite plates with circular, square and rectangular notches using digital image correlation, Composite Structures, Vol. 185, 699-715 (2018).

59. Swarnkar, S., Parwana, H., Kothari, M., and Abhishek" Biplane-Quadrotor Tail-Sitter UAV: Flight Dynamics and Control," Journal of Guidance, Control and Dynamics early edition (2018).

60. Jain, P., and Abhishek, "Modeling and Simulation of Virtual Camber in Cycloidal Rotors," AIAA Journal, Vol. 55, No. 4, pp. 1465-1468, (2017).

61. Rahul, R., and Abhishek, "Performance Optimization of a Variable Speed and Variable Geometry Rotor Concept", Journal of Aircraft, Vol. 54. No. 2, pp. 476-489 (2017).

62. Murugesan, M., Singaravelu, B., Kushwaha, A. K. and Mariappan, S. Onset of flame-intrinsic thermoacoustic instabilities in partially-premixed turbulent combustors. Int'l Journal of Spray and Combustion dynamics, 2018.

63. Singaravelu, B. and Mariappan, S. Criterion for vortex lock-on in combustors with backward facing step. J. Physics: Conference Series, 822:012001, 2017.

64. Mohan, B. and Mariappan, S. Influence of non-perfect impedance boundary on the bistable region in thermoacoustic interactions. J. Physics: Conference Series, 822:012006, 2017.

65. Harpale, A., Sawant, S., Kumar, R., Levin, D., Chew, H.B., "Ablative Thermal Protection Systems: Pyrolysis Modeling by Scale-Bridging Molecular Dynamics", Carbon, 130, 315 (2018).

66. G., Malaikannan, Chinnppan, A.K., Kumar, R., "A Novel Efficient Hybrid DSMC-Dynamic Collision Limiter Algorithm for Multi-scale Transitional Flows", International Journal for Numerical Methods in Fluids, 86 (9), 565 (2018).

67. Kumar, R., Akhil M.V., Chinnappan, A.K., "Denoising of DSMC Simulation Data using the Proper Orthogonal Decomposition Technique", Journal of Spacecraft and Rockets, (2018).

68. Khan A., Kumar, R., "Experimental Study and Passive Control of Over-expanded Plug Nozzle Jet", Journal ofSpacecraft and Rockets, (2018).

69. Kumar, R., Chinnappan, A.K., "Development of a Multi-species, Parallel, 3D Direct Simulation Monte-Carlo Solver for Rarefied Gas Flows", Computers and Fluids, 159, 204 (2017).

70. G. Malaikannan, Kumar, R., "Novel Efficient Particle based Hybrid Approach for Modeling Hypersonic Rarefied Flows", Journal of Spacecraft and Rockets, Manuscript accepted for publication, 54 (6), 1267 (2017).

71. G. Malaikannan, Kumar, R., "Hybrid Particle-Particle Numerical Algorithm for High Speed Non-Equilibrium Flows", Computers and Fluids, 152, 24 (2017).

72. Naspoori S.K., Kammara, K.K., Kumar, R., “Study of Crater Formation and its Characteristics due to Impact of a Cluster Projectile on a Metal Surface by Molecular Dynamics Approach”, Nuclear Inst. and Methods in Physics Research B, 396, 34 (2017).

73. Vishnu S Chipade, Abhishek, Mangal Kothari, and Rushikesh R Chaudhary: Systematic Design Methodology for Development and Flight Testing of a Variable Pitch Quadrotor Biplane VTOL UAV for Payload Delivery, accepted for the publication in Mechatronics (IF: 2.496), Elsevier, 2018.

74. S. Aditya Varma and Mangal Kothari: A 3-D Pitch and Impact-Angle Constrained Guidance Scheme, accepted for the publication in Journal of Aerospace Engineering Part G (IF: 0.809), SAGE, 2018.

75. Swati Swarnkar, Hardik Parwana, Mangal Kothari, and Abhishek: Biplane-Quadrotor Tailsitter UAV: Flight Dynamics and Control, Journal of Guidance, Control, and Dynamics (IF: 1.856), AIAA, 2018.

76. Arijit Sen, Soumya R Sahoo, Mangal Kothari: Cooperative Formation Control Strategies without Relative Velocity Measurements in Heterogeneous Networks, International Journal of Robust and Nonlinear Control (IF: 3.393), Wiley, Vol. 28, Issue 5, pp. 1653-1671, 2018.

77. Mandar B. Kamalaskar, S. Aditya Varma, and Mangal Kothari: A Nonlinear Impact-angle Guidance Law, Journal of Intelligent Unmanned Systems, Emerald, Vol. 5 Issue: 2/3, pp.46-62, 2017.

78. Ritwik Bera, M. V. Ramana, and Mangal Kothari: A Comprehensive Differential Game Theoretic Solution to a Game of Two Cars, Journal of Optimization Theory and Applications (IF:1.289), Springer, Vol. 174, Issue 3, pp. 818–836, 2017.

79. Arijit Sen, Soumya R Sahoo, and Mangal Kothari: Cooperative Target-centric Formation Control Strategies without Relative Velocity Measurements under Heterogeneous Networks, Journal of Intelligent and Robotic Systems (IF: 1.512), Springer, Vol. 87, Issue: 3-4, pp. 683-698, 2017.

80. M. V. Ramana and Mangal Kothari: A Pursuit Strategy to Capture High Speed Evaders using Multiple Pursuers, Journal of Guidance, Control, and Dynamics (IF: 1.856), AIAA, Vol. 40, No. 1, pp 139-149, 2017.

81. Mangal Kothari, Joel G. Manathara, and Ian Postlethwaite: Cooperative Multiple Pursers against a Single Evader, Journal of Intelligent and Robotic Systems (IF: 1.512), Springer, Vol. 86, Issue 3–4, 551–567, 2017.

82. M. V. Ramana and Mangal Kothari: Pursuit-Evasion Games of High Speed Evader, Journal of Intelligent and Robotic Systems (IF: 1.512), Springer, Vol. 85, Issue 2, pp. 293-306, 2017.

83. Chandra Sekar T., Agarwal R, Mandal, A. C. and Kushari, A. Behavior of an aeroelastic system beyond critical point of instability. Physics of Fluids, Vol-29, 114103, 2017.

84. Balamurugan, G., and Mandal, A. C. Experiments on localized secondary instability in bypass boundary layer transition. Journal of Fluid Mech. Vol-817, pp 217-263, 2017.

85. Saha, P., Biswas, G., Mandal, A. C. and Sarkar, S. Investigation of coherent structures in a turbulent channel with built-in longitudinal vortex generators. Int. Journal of Heat and Mass Transfer, Vol-104, pp 178–198, 2017.

86. Rengasamy K., and Mandal, A. C. Experiments on effective tripping device in a zero pressure gradient turbulent boundary layer. Journal of Physics: Conf. series, Vol-822, 012016, 2017.

87. Balamurugan, G., and Mandal, A. C. Experiments in bypass boundary layer transition under a stream with and without shear. Journal of Physics: Conf. series, Vol-822, 012015, 2017.