## THE AERONAUTICAL JOURNAL

# OF THE ROYAL AERONAUTICAL SOCIETY Volume CXVI

### **January-December 2012**

# Subject Index

#### **AERODYNAMICS**

- A career in vortices edge forces. J. Lamar, pp 101-152.
- A case study on the aerodynamic heating of a hypersonic vehicle. M. Mifsud, D. Estruch-Samper, D. MacManus, R. Chaplin and J. Stollery, pp 873-893.
- Advancement of aerofoil section dynamic stall synthesis methods for rotor design. W. Sheng, W. Chan and R. Galbraith, pp 521-539.
- Aerodynamic and performance characteristics of a passive leading edge Kruger flap at low Reynolds numbers. V.M. Moraris, N.J. Lawson and K.P. Garry, pp 757-767.
- Aerodynamic shape optimisation, wind tunnel measurements and CFD analysis of a MAV wing. M.R.A. Nabawy, M.M. ElNomrossy, M.M. Abdelrahman and G.M. ElBayoumi, pp 685-708.
- Aerodynamics modelling for training on the edge of the flight envelope. D.R. Gingras and J.N. Ralston, pp 67-86.
- Aerodynamics of an aerofoil in transonic ground effect: Methods for blowdown wind-tunnel scale testing. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 599-620.
- Aerodynamics of an aerofoil in transonic ground effect: numerical study at full-scale Reynolds numbers. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 407-430.
- An optimal control approach for alleviation of tiltrotor gust response. D. Muro, M. MolicaColella, J. Serafini and M. Gennaretti, pp 651-666.
- Analysis of compressible potential flow over aerofoils using the dual reciprocity method. A.V.G. Cavalieri and P.A.O. Soviero, pp 391-406.
- Analytical Volterra-based models for nonlinear low order flight dynamics approximation systems. A. Omran and B. Newman, pp 1123-1153.
- Camera tracking and qualitative airflow assessment

- of a two-turn erect spin. R.I. Hoff and G.B. Gratton, pp 541-562.
- Characterising low-speed, transitional cavity flow. Y.T. Ng, pp 1185-1199.
- Comprehensive multibody dynamics analysis for rotor aeromechanics predictions in descending flight. J.-S. Park and S.N. Jung, pp 229-249.
- Computational investigation of cavity flow control using a passive device. B. Khanal, K. Knowles and A.J. Saddington, pp 153-174.
- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Factors affecting the apparent longitudinal stick-free static stability of a typical high-wing light aeroplane. M.A. Bromfield and G.B. Gratton, pp 467-499.
- Flight simulator study on the influence of vortex curvature on wake encounter hazard using LES wind fields. D. Vechtel, pp 287-302.
- Flow distortion in an S-duct inlet with simulated icing effect and heat transfer. W. Jin, R.R. Taghav and S. Farokhi, pp 251-270.
- Helicopter flight characteristics in icing conditions. Y. Cao, G. Li and R.A. Hess, pp 963-979.
- Hovering rotor computations using an aeroelastic blade model. F. Dehaeze and G.N. Barakos, pp 621-649.
- Multi-disciplinary simulation of propeller-turboprop aircraft flight. A. Filippone and Z. Mohamed-Kassim, pp 985-1014.
- Numerical investigation of optimal pin location on a supersonic projectile. M. Bell, T.D. Robinson and D. Robinson, pp 271-286.
- Numerical simulations of the flow through the inlet and isolator of a Mach 4 dual mode scramjet. S. Janarthanam and V. Babu, pp 833-846.
- Performance and control optimisations using the adaptive torsion wing. R.M. Ajaj, M.I. Friswell,

- W.G. Dettmer, G. Allegri and A.T. Isikveren, pp 1061-1077.
- Predictive inverse simulation of helicopters in aggressive manoeuvring flight. M. Bagiev, D.G. Thomson, D. Anderson and D. Murray-Smith, pp 87-98
- Robust geometric sizing of a small flying wing planform based on evolutionary algorithms. H. Rodríguez-Cortés and A. Arias-Montaño, pp 175-188.
- Surrogate based design optimisation of composite aerofoil cross-section for helicopter vibration reduction. M.S. Murugan, R. Ganguli and D. Harursampath, pp 709-725.
- The estimation of aerodynamic forces on flat plate aerofoils at hypersonic and supersonic speed. S. Punniyakotti and J.L. Stollery, pp 1207-1215.
- Use of aerofoil section dynamic stall synthesis methods in rotor design. W. Chan and J. Perry, pp 501-520.

#### **AEROELASTICITY**

- A further case for variable geometry. W.A.T. Fritz'Johl, pp 23-44.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 2: Controller implementation validation. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 451-465.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 2: Controller implementation validation. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 451-465.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 1:

  Morphing system mechanisms and controller architecture design. T.L. Grigorie, R.M. Botez,
  A.V. Popov, M. Mamou and Y. Mébarki, pp 433-
- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Hovering rotor computations using an aeroelastic blade model. F. Dehaeze and G.N. Barakos, pp 621-649.

#### **AEROSPACE ENGINEERING**

- 6U CubeSat commercial applications. S.R. Tsitas and J. Kingston, pp 189-198.
- Influence analysis of measurement errors in satellite attitude determination based on extended Kalman filter. Y. Jiao, J. Wang, X. Pan and H. Zhou, pp 373-389.

#### AIRCRAFT DESIGN

- A case study on the aerodynamic heating of a hypersonic vehicle. M. Mifsud, D. Estruch-Samper, D. MacManus, R. Chaplin and J. Stollery, pp 873-893.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 1: Morphing system mechanisms and controller architecture design. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 433-449.
- A parametric associative modelling of aeronautical structural concepts under C0 C1 or C2 continuity constraints. V. Dattoma, M. DeGiorgi, S. Giancane, P. Manco and A.E. Morabito, pp 727-741.
- Aerodynamic shape optimisation, wind tunnel measurements and CFD analysis of a MAV wing. M.R.A. Nabawy, M.M. ElNomrossy, M.M. Abdelrahman and G.M. ElBayoumi, pp 685-708.
- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Joint fixity effect on structural design of a box wing aircraft. P.O. Jemitola, J. Fielding and P. Stocking, pp 363-372.
- Performance and control optimisations using the adaptive torsion wing. R.M. Ajaj, M.I. Friswell, W.G. Dettmer, G. Allegri and A.T. Isikveren, pp 1061-1077.
- Robust geometric sizing of a small flying wing planform based on evolutionary algorithms. H. Rodríguez-Cortés and A. Arias-Montaño, pp 175-188.
- Shape optimisation in the design of thin-walled shells as components of aerospace structures. P.A. SuarezEspinoza, K-U. Bletzinger, H.R.E.M. Hörnlein, F. Daoud, G. Schuhmacher and M. Klug, pp 793-814.
- Use of aerofoil section dynamic stall synthesis methods in rotor design. W. Chan and J. Perry, pp 501-520.

#### **AIRWORTHINESS**

- Comprehensive multibody dynamics analysis for rotor aeromechanics predictions in descending flight. J.-S. Park and S.N. Jung, pp 229-249.
- Factors affecting the apparent longitudinal stick-free static stability of a typical high-wing light aeroplane. M.A. Bromfield and G.B. Gratton, pp 467-499.
- Multi-disciplinary simulation of propeller-turboprop aircraft flight. A. Filippone and Z. Mohamed-Kassim, pp 985-1014.
- Predictive inverse simulation of helicopters in aggressive manoeuvring flight. M. Bagiev, D.G. Thomson, D. Anderson and D. Murray-Smith, pp 87-98.

Simulating the environment at the helicopter-ship dynamic interface: research, development and application. S.J. Hodge, J.S. Forrest, G.D. Padfield and I. Owen, pp 1155-1184.

#### **BOOK REVIEWS — BY AUTHOR**

- Adrian, R.J. and Westerweel, J. Particle Image Velocimetry, p 219.
- Anderson, J.D. Fundamentals of Aerodynamics (Fifth edition), p 222.
- Bazant, Z.P. and Cedolin, L. Stability of Structures: Elastic, Inelastic, Fracture and Damage Theories, p 218
- Benaroya, H. and Nagurka, M.L. Mechnical Vibration: Analysis, Uncertaincies and Control (Third edition), p 220.
- Blockley, R. and Shyy, W. (Eds) Encyclopedia of Aerospace Engineering — Volume 3: Structural Technology, p 323.
- Blockley, R. and Shyy, W. (Eds) Encyclopedia of Aerospace Engineering — Volume 4: Materials Technology, p 326.
- Blockley, R. and Shyy, W. (Eds) Encyclopedia of Aerospace Engineering — Volume 5: Dynamics and Control, p 329.
- Bowersox, R.D.W. and Schetz, J.A. Boundary Layer Analysis (Second edition), p 333.
- Cedolin, L. and Bazant, Z.P. Stability of Structures: Elastic, Inelastic, Fracture and Damage Theories, p 218.
- Chen, V.C. The Micro-Doppler Effect in Radar, p
- Deakin, R.S. Battlespace Technologies: Network-Enabled Information Dominance, p 980.
- Genta, G. Introduction to the Mechanics of Space Robots, p 770.
- Gibson, R.F. Principles of Composite Material Mechanics (Third edition), p 563.
- Golfman, Y. Hybrid Anistropic Materials for Structural Aviation Parts, p 331.
- Gulcat, U. Fundamentals of Modern Unsteady Aerodynamics, p 217.
- Gundlach, J. and Paley, D.A. Designing Unmanned Aircraft Systems: a Comprehensive Approach, p 981.
- Jazar, R.N. Advanced Dynamics: Rigid Body, Multibody and Aerospace Applications, p 330.
- Kasdin, M.J. Engineering Dynamics: a Comprehensive Introduction, p 982.
- Kleyner, A. and O'Conner, P.D.T. Practical Reliability Engineering (Fifth edition), p 565.
- Langton, R. and MacIsaac, B. Gas Turbine Propulsion Systems, p 226.
- Lechevnin, N. and Rabbath, C.A. Safety and Reliability in Co-operating Unmanned Aerial Systems, p 564.

- Lewisetal, F.L. Optimal Control (Third edition), p 770.
- MacIsaac, B. and Langton, R. Gas Turbine Propulsion Systems, p 226.
- Maloratsky, L.G. Integrated Microwave Front-Ends: with Avionics Applications, p 983.
- McCormick, B.W. Introduction to Flight Testing and Applied Aerodynamics, p 334.
- Nagurka, M.L. and Benaroya, H. Mechnical Vibration: Analysis, Uncertaincies and Control (Third edition), p 220.
- Napolitano, M.R. Aircraft Dynamics: From Modeling to Simulation, p 680.
- Narasaiah, G.L. Aircraft Structures, p 681.
- O'Conner, P.D.T. and Kleyner, A. Practical Reliability Engineering (Fifth edition), p 565.
- Paley, D.A. and Gundlach, J. Designing Unmanned Aircraft Systems: a Comprehensive Approach, p 981.
- Rabbath, C.A. and Lechevnin, N. Safety and Reliability in Co-operating Unmanned Aerial Systems, p 564.
- Rodden, W.P. Theoretical and Computational Aeroelasticity, p 980.
- Schetz, J.A. and Bowersox, R.D.W. Boundary Layer Analysis (Second edition), p 333.
- Sears, W.M. and Telionis, D.P. (Eds) Introduction to Theoretical Aerodynamics and Hydrodynamics, p 329.
- Shyy, W. and Blockley, R. (Eds) Encyclopedia of Aerospace Engineering — Volume 3: Structural Technology, p 323.
- Shyy, W. and Blockley, R. (Eds) Encyclopedia of Aerospace Engineering — Volume 4: Materials Technology, p 326.
- Shyy, W. and Blockley, R. (Eds) Encyclopedia of Aerospace Engineering — Volume 5: Dynamics and Control, p 329.
- Telionis, D.P. and Sears, W.M. (Eds) Introduction to Theoretical Aerodynamics and Hydrodynamics, p 329.
- Tewari, A. Advanced Control of Aircraft, Spacecraft and Rockets, p 224.
- Torenbeek, E. and Wittenberg, H. Flight Physics: Essentials of Aeronautical Disciplines and Technology, with Historical Notes, p 223.
- Westerweel, J. and Adrian, R.J. Particle Image Velocimetry, p 219.
- Wittenberg, H. and Torenbeek, E. Flight Physics: Essentials of Aeronautical Disciplines and Technology, with Historical Notes, p 223.
- Yakimenko, O.A. Engineering Computations and Modelling in MATLAB/Simulink, p 774.
- Yanushevsky, R. Guidance of Unmanned Aerial Vehicles, p 564.

#### **BOOK REVIEWS — BY TITLE**

- Advanced Control of Aircraft, Spacecraft and Rockets. A. Tewari, p 224.
- Advanced Dynamics: Rigid Body, Multibody and Aerospace Applications. R.N. Jazar, p 330.
- Aircraft Dynamics: From Modeling to Simulation. M.R. Napolitano, p 680.
- Aircraft Structures. G.L. Narasaiah, p 681.
- Battlespace Technologies: Network-Enabled Information Dominance. R.S. Deakin, p 980.
- Boundary Layer Analysis (Second edition). J.A. Schetz and R.D.W. Bowersox, p 333.
- Designing Unmanned Aircraft Systems: a Comprehensive Approach. J. Gundlach and D.A. Paley, p 981.
- Encyclopedia of Aerospace Engineering Volume 3: Structural Technology. R. Blockley and W. Shyy (Eds), p 323.
- Encyclopedia of Aerospace Engineering Volume 4: Materials Technology. R. Blockley and W. Shyy (Eds), p 326.
- Encyclopedia of Aerospace Engineering Volume 5: Dynamics and Control. R. Blockley and W. Shyy (Eds), p 329.
- Engineering Computations and Modelling in MATLAB/Simulink. O.A. Yakimenko, p 774.
- Engineering Dynamics: a Comprehensive Introduction. M.J. Kasdin, p 982.
- Flight Physics: Essentials of Aeronautical Disciplines and Technology, with Historical Notes. E. Torenbeek and H. Wittenberg, p 223.
- Fundamentals of Aerodynamics (Fifth edition). J.D. Anderson, p 222.
- Fundamentals of Modern Unsteady Aerodynamics. U. Gulcat, p 217.
- Gas Turbine Propulsion Systems. B. MacIsaac and R. Langton, p 226.
- Guidance of Unmanned Aerial Vehicles. R. Yanushevsky, p 564.
- Hybrid Anistropic Materials for Structural Aviation Parts. Y. Golfman, p 331.
- Integrated Microwave Front-Ends: with Avionics Applications. L.G. Maloratsky, p 983.
- Introduction to Flight Testing and Applied Aerodynamics. B.W. McCormick, p 334.
- Introduction to the Mechanics of Space Robots. G. Genta, p 770.
- Introduction to Theoretical Aerodynamics and Hydrodynamics. W.M. Sears and D.P. Telionis (Ed), p 329.
- Mechnical Vibration: Analysis, Uncertaincies and Control (Third edition). H. Benaroya and M.L. Nagurka, p 220.
- Optimal Control (Third edition). F.L. Lewisetal, p 770.

- Particle Image Velocimetry. R.J. Adrian and J. Westerweel, p 219.
- Practical Reliability Engineering (Fifth edition). P.D.T. O'Conner and A. Kleyner, p 565.
- Principles of Composite Material Mechanics (Third edition). R.F. Gibson, p 563.
- Safety and Reliability in Co-operating Unmanned Aerial Systems. C.A. Rabbath and N. Lechevnin, p 564.
- Stability of Structures: Elastic, Inelastic, Fracture and Damage Theories. Z.P. Bazant and L. Cedolin, p 218.
- The Micro-Doppler Effect in Radar. V.C. Chen, p 221.
- Theoretical and Computational Aeroelasticity. W.P. Rodden, p 980.

#### **COMPOSITES**

- A finite element analysis of impact damage in composite laminates. Y. Shi and C. Soutis, pp 1331-1347.
- Finite element modelling of sandwich panels with graded core under various boundary conditions. M. Kashtalyan and B. Woodward, pp 1289-1314.
- Modelling of impact damage zones in composite laminates for strength after impact. R. Olsson, pp 1349-1365.
- Modelling progressive failure of fibre-reinforced laminated composites: mesh objective calculations. E.J. Pineda and A.M. Waas, pp 1221-1246.
- Predicting low-velocity impact damage in composites by a quasi-static load model with cohesive interface elements. X. Zhang, H. Liu and F. Bianchi, pp 1367-1381.
- Surrogate based design optimisation of composite aerofoil cross-section for helicopter vibration reduction. M.S. Murugan, R. Ganguli and D. Harursampath, pp 709-725.
- The influence of surface ply fibre angle on the compressive strength of composite laminates containing delamination. A.T. Rhead, R. Butler, W. Liu and N. Baker, pp 1313-1328.
- The perforation resistance of sandwich structures subjected to low velocity projectile impact loading. J. Zhou, Z.W. Guan and W.J. Cantwell, pp 1247-1262.

#### COMPUTATIONAL FLUID DYNAMICS

- A career in vortices edge forces. J. Lamar, pp 101-152.
- Aerodynamic shape optimisation, wind tunnel measurements and CFD analysis of a MAV wing. M.R.A. Nabawy, M.M. ElNomrossy, M.M. Abdelrahman and G.M. ElBayoumi, pp 685-708.
- Analysis of compressible potential flow over aerofoils using the dual reciprocity method. A.V.G. Cavalieri and P.A.O. Soviero, pp 391-406.

- Characterising low-speed, transitional cavity flow. Y.T. Ng, pp 1185-1199.
- Computational investigation of cavity flow control using a passive device. B. Khanal, K. Knowles and A.J. Saddington, pp 153-174.
- Flight simulator study on the influence of vortex curvature on wake encounter hazard using LES wind fields. D. Vechtel, pp 287-302.
- On the generation of the mean velocity profile for turbulent boundary layers with pressure gradient under equilibrium conditions. A. Rona, M. Monti and C. Airiau, pp 569-598.
- The estimation of aerodynamic forces on flat plate aerofoils at hypersonic and supersonic speed. S. Punniyakotti and J.L. Stollery, pp 1207-1215.

#### **COMPUTATIONAL TECHNIQUES**

Characterising low-speed, transitional cavity flow. Y.T. Ng, pp 1185-1199.

Comprehensive multibody dynamics analysis for rotor aeromechanics predictions in descending flight. J.-S. Park and S.N. Jung, pp 229-249.

#### **DAMAGE TOLERANCE**

- A finite element analysis of impact damage in composite laminates, Y. Shi and C. Soutis, pp 1331-1347.
- Modelling of impact damage zones in composite laminates for strength after impact. R. Olsson, pp 1349-1365.
- Parametric damage tolerance design of metallic aeronautical stiffened panels. G. Molinari, I. Meneghin, M. Melega and E. Troiani, pp 815-831.
- Predicting low-velocity impact damage in composites by a quasi-static load model with cohesive interface elements. X. Zhang, H. Liu and F. Bianchi, pp 1367-1381.
- The perforation resistance of sandwich structures subjected to low velocity projectile impact loading. J. Zhou, Z.W. Guan and W.J. Cantwell, pp 1247-1262.

#### **ENVIRONMENTAL ENGINEERING**

- A framework for environmental risk management. S. Lloyd, A. Clifton, J. Lee, L. Elghali and C. France, pp 941-961.
- Aircraft conceptual design for optimal environmental performance. R.P. Henderson, J.R.R.A. Martins and R.E. Perez, pp 1-22.
- Aviation renewable fuels: technical status and challenges for commercialisation. S. Anderson, J. Cooper, N. Gudde and J. Howes, pp 1103-1122.

#### **FATIGUE**

Modelling progressive failure of fibre-reinforced laminated composites: mesh objective calculations. E.J. Pineda and A.M. Waas, pp 1221-1244.

- Computation of stress intensity factors in functionally graded materials using partition-of-unity meshfree method. B. Falzon, N. Muthu, S.K. Maiti and I. Guiamatsi, pp 1263-1287.
- Performance of Glare panels subjected to intense pressure pulse loading. C. Soutis, G. Mohamed and A. Hodzic, pp 667-679.

#### **FLIGHT CONTROL**

- Factors affecting the apparent longitudinal stick-free static stability of a typical high-wing light aeroplane. M.A. Bromfield and G.B. Gratton, pp 467-499.
- High-accuracy four-dimensional trajectory prediction for civil aircraft. W. Schuster, M. Porretta and W. Ochieng, pp 45-66.
- Towards understanding effects of non-linear flight control system elements on inexperienced pilots (Technical Note). M.M. Lone, N. Ruseno and A.K. Cooke, pp 1201-1206.

#### FLIGHT CONTROL SYSTEMS

- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 2: Controller implementation validation. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 451-465.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 1: Morphing system mechanisms and controller architecture design. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 433-449.
- An optimal control approach for alleviation of tiltrotor gust response. D. Muro, M. MolicaColella, J. Serafini and M. Gennaretti, pp 651-666.
- Performance and control optimisations using the adaptive torsion wing. R.M. Ajaj, M.I. Friswell, W.G. Dettmer, G. Allegri and A.T. Isikveren, pp 1061-1077.
- Towards understanding effects of non-linear flight control system elements on inexperienced pilots (Technical Note). M.M. Lone, N. Ruseno and A.K. Cooke, pp 1201-1206.

#### **FLIGHT DYNAMICS**

- Aerodynamics of an aerofoil in transonic ground effect: Methods for blowdown wind-tunnel scale testing. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 599-620.
- Aerodynamics of an aerofoil in transonic ground effect: numerical study at full-scale Reynolds numbers. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 407-430.

- Predictive inverse simulation of helicopters in aggressive manoeuvring flight. M. Bagiev, D.G. Thomson, D. Anderson and D. Murray-Smith, pp 87-98
- Simulating the environment at the helicopter-ship dynamic interface: research, development and application. S.J. Hodge, J.S. Forrest, G.D. Padfield and I. Owen, pp 1155-1184.

#### **HUMAN FACTORS**

- Factors affecting safety during night visual approach segments for offshore helicopters. F.A.C. Nascimento, A. Majumdar and S. Jarvis, pp 303-322.
- The benefits and limitations of ground-based upsetrecovery training for general aviation pilots. R.O. Rogers and A. Boquet, pp 1015-1039.
- Towards understanding effects of non-linear flight control system elements on inexperienced pilots (Technical Note). M.M. Lone, N. Ruseno and A.K. Cooke, pp 1201-1206.

#### HYPERSONIC FLIGHT

- A case study on the aerodynamic heating of a hypersonic vehicle. M. Mifsud, D. Estruch-Samper, D. MacManus, R. Chaplin and J. Stollery, pp 873-893.
- Numerical simulations of the flow through the inlet and isolator of a Mach 4 dual mode scramjet. S. Janarthanam and V. Babu, pp 833-846.
- The estimation of aerodynamic forces on flat plate aerofoils at hypersonic and supersonic speed. S. Punniyakotti and J.L. Stollery, pp 1207-1215.

#### **ICING**

- Flow distortion in an S-duct inlet with simulated icing effect and heat transfer. W. Jin, R.R. Taghav and S. Farokhi, pp 251-270.
- Helicopter flight characteristics in icing conditions. Y. Cao, G. Li and R.A. Hess, pp 963-979.
- In-flight ice formation simulation on finite wings and air intakes. S. Özgen and M. Canibek, pp 337-362.

#### **MATERIALS**

- A finite element analysis of impact damage in composite laminates. Y. Shi and C. Soutis, pp 1331-1347.
- Finite element modelling of sandwich panels with graded core under various boundary conditions. M. Kashtalyan and B. Woodward, pp 1289-1314.
- Modelling of impact damage zones in composite laminates for strength after impact. R. Olsson, pp 1349-1366.
- Modelling progressive failure of fibre-reinforced laminated composites: mesh objective calculations. E.J. Pineda and A.M. Waas, pp 1221-1244.

- Computation of stress intensity factors in functionally graded materials using partition-of-unity meshfree method. B. Falzon, N. Muthu, S.K. Maiti and I. Guiamatsi, pp 1263-1287
- Parametric damage tolerance design of metallic aeronautical stiffened panels. G. Molinari, I. Meneghin, M. Melega and E. Troiani, pp 815-831.
- Performance of Glare panels subjected to intense pressure pulse loading. C. Soutis, G. Mohamed and A. Hodzic, pp 667-679.
- Predicting low-velocity impact damage in composites by a quasi-static load model with cohesive interface elements. X. Zhang, H. Liu and F. Bianchi, pp 1367-1381
- Shape optimisation in the design of thin-walled shells as components of aerospace structures. P.A. SuarezEspinoza, K-U. Bletzinger, H.R.E.M. Hörnlein, F. Daoud, G. Schuhmacher and M. Klug, pp 793-814.
- The influence of surface ply fibre angle on the compressive strength of composite laminates containing delamination. A.T. Rhead, R. Butler, W. Liu and N. Baker, pp 1315-1330.
- The perforation resistance of sandwich structures subjected to low velocity projectile impact loading. J. Zhou, Z.W. Guan and W.J. Cantwell, pp 1247-1262.

#### **PROPULSION**

Numerical simulations of the flow through the inlet and isolator of a Mach 4 dual mode scramjet. S. Janarthanam and V. Babu, pp 833-846.

#### RENEWABLE FUELS

Aviation renewable fuels: technical status and challenges for commercialisation. S. Anderson, J. Cooper, N. Gudde and J. Howes, pp 1103-1122.

#### ROTORCRAFT

- Advancement of aerofoil section dynamic stall synthesis methods for rotor design. W. Sheng, W. Chan and R. Galbraith, pp 521-539.
- An optimal control approach for alleviation of tiltrotor gust response. D. Muro, M. MolicaColella, J. Serafini and M. Gennaretti, pp 651-666.
- Comprehensive multibody dynamics analysis for rotor aeromechanics predictions in descending flight. J.-S. Park and S.N. Jung, pp 229-249.
- Factors affecting safety during night visual approach segments for offshore helicopters. F.A.C.

  Nascimento, A. Majumdar and S. Jarvis, pp 303-
- Helicopter flight characteristics in icing conditions. Y. Cao, G. Li and R.A. Hess, pp 963-979.
- High-accuracy four-dimensional trajectory prediction for civil aircraft. W. Schuster, M. Porretta and W. Ochieng, pp 45-66.

- Hovering rotor computations using an aeroelastic blade model. F. Dehaeze and G.N. Barakos, pp 621-649.
- Operational performance of inlet barrier filters for rotorcraft. N. Bojdo and A. Filippone, pp 847-869.
- Predictive inverse simulation of helicopters in aggressive manoeuvring flight. M. Bagiev, D.G. Thomson, D. Anderson and D. Murray-Smith, pp 87-98.
- Simulating the environment at the helicopter-ship dynamic interface: research, development and application. S.J. Hodge, J.S. Forrest, G.D. Padfield and I. Owen, pp 1155-1184.
- Surrogate based design optimisation of composite aerofoil cross-section for helicopter vibration reduction. M.S. Murugan, R. Ganguli and D. Harursampath, pp 709-725.
- Use of aerofoil section dynamic stall synthesis methods in rotor design. W. Chan and J. Perry, pp 501-520.

#### SAFETY

Factors affecting safety during night visual approach segments for offshore helicopters. F.A.C.

Nascimento, A. Majumdar and S. Jarvis, pp 303-322.

The benefits and limitations of ground-based upset-recovery training for general aviation pilots. R.O.

Rogers and A. Boquet, pp 1015-1039.

#### **SIMULATION**

- Flight simulator study on the influence of vortex curvature on wake encounter hazard using LES wind fields. D. Vechtel, pp 287-302.
- Flow distortion in an S-duct inlet with simulated icing effect and heat transfer. W. Jin, R.R. Taghav and S. Farokhi, pp 251-270.
- In-flight ice formation simulation on finite wings and air intakes. S. Özgen and M. Canibek, pp 337-362.Multi-disciplinary simulation of propeller-turboprop aircraft flight. A. Filippone and Z. Mohamed-Kassim, pp 985-1014.
- Numerical simulations of the flow through the inlet and isolator of a Mach 4 dual mode scramjet. S. Janarthanam and V. Babu, pp 833-846.
- Predictive inverse simulation of helicopters in aggressive manoeuvring flight. M. Bagiev, D.G. Thomson, D. Anderson and D. Murray-Smith, pp 87-98.
- Simulating the environment at the helicopter-ship dynamic interface: research, development and application. S.J. Hodge, J.S. Forrest, G.D. Padfield and I. Owen, pp 1155-1184.

#### **STRUCTURES**

A finite element analysis of impact damage in composite laminates. Y. Shi and C. Soutis,

- pp 1331-1347.
- A further case for variable geometry. W.A.T. Fritz'Johl, pp 23-44.
- A parametric associative modelling of aeronautical structural concepts under C0 C1 or C2 continuity constraints. V. Dattoma, M. DeGiorgi, S. Giancane, P. Manco and A.E. Morabito, pp 727-741.
- Aerodynamic shape optimisation, wind tunnel measurements and CFD analysis of a MAV wing. M.R.A. Nabawy, M.M. ElNomrossy, M.M. Abdelrahman and G.M. ElBayoumi, pp 685-708.
- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Finite element modelling of sandwich panels with graded core under various boundary conditions. M. Kashtalyan and B. Woodward, pp 1289-1314.
- Joint fixity effect on structural design of a box wing aircraft. P.O. Jemitola, J. Fielding and P. Stocking, pp 363-372.
- Modelling of impact damage zones in composite laminates for strength after impact. R. Olsson, pp 1349-1366.
- Modelling progressive failure of fibre-reinforced laminated composites: mesh objective calculations. E.J. Pineda and A.M. Waas, pp 1221-1246.
- Numerical investigation of optimal pin location on a supersonic projectile. M. Bell, T.D. Robinson and D. Robinson, pp 271-286.
- Computation of stress intensity factors in functionally graded materials using partition-ofunity meshfree method. B. Falzon, N. Muthu, S.K. Maiti and I. Guiamatsi, pp 1263-1287
- Parametric damage tolerance design of metallic aeronautical stiffened panels. G. Molinari, I. Meneghin, M. Melega and E. Troiani, pp 815-831.
- Performance of Glare panels subjected to intense pressure pulse loading. C. Soutis, G. Mohamed and A. Hodzic, pp 667-679.
- Predicting low-velocity impact damage in composites by a quasi-static load model with cohesive interface elements. X. Zhang, H. Liu and F. Bianchi, pp 1367-1381.
- Shape optimisation in the design of thin-walled shells as components of aerospace structures. P.A. Suarez Espinoza, K-U. Bletzinger, H.R.E.M. Hörnlein, F. Daoud, G. Schuhmacher and M. Klug, pp 793-814.
- Shape optimisation using CAD linked free-form deformation. A. Nurdin, N.W. Bressloff, A.J. Keane and C.M.E. Holden, pp 915-939.
- The estimation of aerodynamic forces on flat plate aerofoils at hypersonic and supersonic speed. S. Punniyakotti and J.L. Stollery, pp 1207-1215.
- The perforation resistance of sandwich structures subjected to low velocity projectile impact loading. J. Zhou, Z.W. Guan and W.J. Cantwell, pp 1247-1262.

#### SUPERSONIC FLIGHT

- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Numerical investigation of optimal pin location on a supersonic projectile. M. Bell, T.D. Robinson and D. Robinson, pp 271-286.
- The estimation of aerodynamic forces on flat plate aerofoils at hypersonic and supersonic speed. S. Punniyakotti and J.L. Stollery, pp 1207-1215.

#### **SYSTEMS**

- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 2: Controller implementation validation. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 451-465.
- A hybrid fuzzy logic proportional-integral-derivative conventional on-off controller for morphing wing actuation using shape memory alloy. Part 1: Morphing system mechanisms and controller architecture design. T.L. Grigorie, R.M. Botez, A.V. Popov, M. Mamou and Y. Mébarki, pp 433-449.
- Effects of targeting pod modification on F/A-18C Hornet weapons release. C.W. O'Brien, M.R. Snyder, E.N. Hallberg and A. Cenko, pp 743-755.
- Flow distortion in an S-duct inlet with simulated icing effect and heat transfer. W. Jin, R.R. Taghav and S. Farokhi, pp 251-270.
- Implementation of vision-based automatic guidance system on a fixed-wing unmanned aerial vehicle. C-S. Lee and F-B. Hsiao, pp 895-914.
- Influence analysis of measurement errors in satellite attitude determination based on extended Kalman filter. Y. Jiao, J. Wang, X. Pan and H. Zhou, pp 373-389.
- Operational performance of inlet barrier filters for rotorcraft. N. Bojdo and A. Filippone, pp 847-869.
- Towards understanding effects of non-linear flight control system elements on inexperienced pilots (Technical Note). M.M. Lone, N. Ruseno and A.K. Cooke, pp 1201-1206.

#### **TESTING**

A case study on the aerodynamic heating of a hypersonic vehicle. M. Mifsud, D. Estruch-Samper, D. MacManus, R. Chaplin and J. Stollery, pp 873-893.

- Aerodynamics of an aerofoil in transonic ground effect: Methods for blowdown wind-tunnel scale testing. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 599-620.
- Aerodynamics of an aerofoil in transonic ground effect: numerical study at full-scale Reynolds numbers. G. Doig, T.J. Barber, A.J. Neely and D.D. Myre, pp 407-430.
- Computational investigation of cavity flow control using a passive device. B. Khanal, K. Knowles and A.J. Saddington, pp 153-174.
- Effect of thickness and angle-of-attack on the aeroelastic stability of supersonic fins. R.D. Firouz-Abadi and S.M. Alavi, pp 777-792.
- Effects of targeting pod modification on F/A-18C Hornet weapons release. C.W. O'Brien, M.R. Snyder, E.N. Hallberg and A. Cenko, pp 743-755.

#### **TRAINING**

- Aerodynamics modelling for training on the edge of the flight envelope. D.R. Gingras and J.N. Ralston, pp 67-86.
- The benefits and limitations of ground-based upsetrecovery training for general aviation pilots. R.O. Rogers and A. Boquet, pp 1015-1039.

#### **UAVS**

- Aerodynamic shape optimisation, wind tunnel measurements and CFD analysis of a MAV wing. M.R.A. Nabawy, M.M. ElNomrossy, M.M. Abdelrahman and G.M. ElBayoumi, pp 685-708.
- Implementation of vision-based automatic guidance system on a fixed-wing unmanned aerial vehicle. C-S. Lee and F-B. Hsiao, pp 895-914.
- Influence of stores on the flow inside UCAV weapon bays. S.J. Lawson and G.N. Barakos, pp 199-215.

#### **UNSTEADY AERODYNAMICS**

- Investigation of skin porosity damping effects on free stream disturbance induced unsteady wing loads.B. Dahdi, M. Mamou, M. Khalid, S. Benissaad and Z. Nemouchi, pp 1041-1060.
- Improved extrapolation of steady turbulent aerodynamics using a non-linear POD-based reduced order model. R. Zimmermann and S. Görtz, pp 1079-1100.
- On the generation of the mean velocity profile for turbulent boundary layers with pressure gradient under equilibrium conditions. A. Rona, M. Monti and C. Airiau, pp 569-598