

Robert A Canfield

List of Publications by Year in descending order

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146
papers

2,121
citations

361413

20
h-index

289244

40
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146
all docs

146
docs citations

146
times ranked

845
citing authors

#	ARTICLE	IF	CITATIONS
1	Polynomial Chaos Expansion with Latin Hypercube Sampling for Estimating Response Variability. AIAA Journal, 2004, 42, 1191-1198.	2.6	177
2	An approximation approach for uncertainty quantification using evidence theory. Reliability Engineering and System Safety, 2004, 86, 215-225.	8.9	176
3	Epistemic uncertainty quantification techniques including evidence theory for large-scale structures. Computers and Structures, 2004, 82, 1101-1112.	4.4	160
4	ASTROS - A multidisciplinary automated structural design tool. Journal of Aircraft, 1990, 27, 1021-1027.	2.4	115
5	Comparison of evidence theory and Bayesian theory for uncertainty modeling. Reliability Engineering and System Safety, 2004, 85, 295-311.	8.9	83
6	High-quality approximation of eigenvalues in structural optimization. AIAA Journal, 1990, 28, 1116-1122.	2.6	80
7	Joined-Wing Aeroelastic Design with Geometric Nonlinearity. Journal of Aircraft, 2005, 42, 832-848.	2.4	76
8	Structural reliability under non-Gaussian stochastic behavior. Computers and Structures, 2004, 82, 1113-1121.	4.4	63
9	Uncertainty Quantification of Structural Response Using Evidence Theory. AIAA Journal, 2003, 41, 2062-2068.	2.6	60
10	Sensitivity analysis of structural response uncertainty propagation using evidence theory. Structural and Multidisciplinary Optimization, 2006, 31, 270-279.	3.5	57
11	A Joined-Wing Structural Weight Modeling Study. , 2002, , .		35
12	Nonlinear Response Structural Optimization of a Joined Wing Using Equivalent Loads. AIAA Journal, 2008, 46, 2703-2713.	2.6	35
13	Structural Optimization of a Joined Wing Using Equivalent Static Loads. Journal of Aircraft, 2007, 44, 1302-1308.	2.4	34
14	Integrated structural design and vibration suppression using independent modal space control. AIAA Journal, 1994, 32, 2053-2060.	2.6	33
15	Aeroelastic Scaling of a Joined Wing for Nonlinear Geometric Stiffness. AIAA Journal, 2012, 50, 513-522.	2.6	31
16	Optimum design of structures with multiple constraints. AIAA Journal, 1988, 26, 78-85.	2.6	28
17	Design of frames against buckling using a Rayleigh quotient approximation. AIAA Journal, 1993, 31, 1143-1149.	2.6	27
18	Joined-Wing Sensor-Craft Configuration Design. Journal of Aircraft, 2006, 43, 1470-1478.	2.4	26

#	ARTICLE	IF	CITATIONS
19	MULTIVARIATE HERMITE APPROXIMATION FOR DESIGN OPTIMIZATION. International Journal for Numerical Methods in Engineering, 1996, 39, 787-803.	2.8	24
20	Nonlinear Aeroelastic Scaled-Model Design. Journal of Aircraft, 2016, 53, 20-32.	2.4	22
21	Nonlinear Dynamic Response Structural Optimization of a Joined-Wing Using Equivalent Static Loads. Journal of Aircraft, 2009, 46, 821-831.	2.4	21
22	Nonlinear Aeroelastic-Scaled-Model Optimization Using Equivalent Static Loads. Journal of Aircraft, 2014, 51, 1842-1851.	2.4	21
23	Optimization Process for Configuration of Flexible Joined-Wing. , 2004, , .		20
24	SensorCraft Structural Optimization and Analytical Certification. , 2003, , .		19
25	Estimation of structural reliability for Gaussian random fields. Structure and Infrastructure Engineering, 2006, 2, 161-173.	3.7	19
26	Boundary velocity method for continuum shape sensitivity of nonlinear fluid-structure interaction problems. Journal of Fluids and Structures, 2013, 40, 284-301.	3.4	19
27	Aeroelastic Scaling and Optimization of a Joined-Wing Aircraft Concept. , 2007, , .		18
28	Alleviation of buffet-induced vibration using piezoelectric actuators. Computers and Structures, 2008, 86, 281-291.	4.4	16
29	Local continuum shape sensitivity with spatial gradient reconstruction. Structural and Multidisciplinary Optimization, 2014, 50, 975-1000.	3.5	16
30	Structural Optimization with Stiffness and Frequency Constraints. Mechanics Based Design of Structures and Machines, 1989, 17, 95-110.	0.6	14
31	Successive Matrix Inversion Method for Reanalysis of Engineering Structural Systems. AIAA Journal, 2004, 42, 1529-1535.	2.6	14
32	Fluid-Structure Transient Gust Sensitivity Using Least-Squares Continuous Sensitivity Analysis. , 2009, , .		14
33	Continuum Shape Sensitivity for Nonlinear Transient Aeroelastic Gust Response. , 2011, , .		14
34	Equivalence of continuum and discrete analytic sensitivity methods for nonlinear differential equations. Structural and Multidisciplinary Optimization, 2013, 48, 1173-1188.	3.5	14
35	Evaluation of Quasi-Static Gust Loads Certification Methods for High-Altitude Long-Endurance Aircraft. Journal of Aircraft, 2013, 50, 457-468.	2.4	14
36	Multipoint cubic surrogate function for sequential approximate optimization. Structural and Multidisciplinary Optimization, 2004, 27, 326.	3.5	13

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37	Continuous Sensitivity Analysis of Fluid-Structure Interaction Problems Using Least-Squares Finite Elements. , 2008, , .		13
38	Design of a Scaled RPV for Investigation of Gust Response of Joined-Wing Sensorcraft. , 2009, , .		13
39	Non-Linear Aeroelastic Scaling of a Joined-Wing Concept. , 2007, , .		12
40	Fluid-Structure Transient Gust Response Sensitivity for a Nonlinear Joined Wing Model. , 2010, , .		12
41	Nonlinear Aeroelastic Scaling of a Joined Wing Aircraft. , 2012, , .		12
42	Multipoint quadratic approximation for numerical optimization. , 1994, , .		12
43	A MATLAB toolbox for fixed-order, mixed-norm control synthesis. IEEE Control Systems, 1996, 16, 36-44.	0.8	11
44	Structurally Integrated Antennas on a Joined-Wing Aircraft. , 2003, , .		11
45	Joined-Wing Sensor-Craft Configuration Design. , 2004, , .		11
46	Least-Squares Continuous Sensitivity Shape Optimization for Structural Elasticity Applications. AIAA Journal, 2010, 48, 2752-2762.	2.6	11
47	Parametric Representation and Shape Optimization of Flapping Micro Air Vehicle Wings. International Journal of Micro Air Vehicles, 2012, 4, 179-202.	1.3	11
48	Aero-Structural Coupling and Sensitivity of a Joined-Wing SensorCraft. , 2003, , .		10
49	Structural Design Optimization Based on Reliability Analysis Using Evidence Theory. , 0, , .		10
50	Joined-Wing Wind-Tunnel Test for Longitudinal Control via Aftwing Twist. Journal of Aircraft, 2010, 47, 1481-1489.	2.4	10
51	Utility of Quasi-Static Gust Loads Certification Methods for Novel Configurations. , 2011, , .		10
52	Continuum Shape Sensitivity with Spatial Gradient Reconstruction of Nonlinear Aeroelastic Gust Response. , 2012, , .		10
53	Pareto Front Approximation Using a Hybrid Approach. Procedia Computer Science, 2013, 18, 521-530.	2.0	10
54	Multiobjective optimization using an adaptive weighting scheme. Optimization Methods and Software, 2016, 31, 110-133.	2.4	10

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55	Integration of Geometric Sensitivity and Spatial Gradient Reconstruction for Aeroelastic Shape Optimization. , 2014, , .		9
56	Aeroelastic Shape Optimization of a Flapping Wing. Journal of Aircraft, 2016, 53, 636-650.	2.4	9
57	Finite element model tuning using automated structural optimization system software. AIAA Journal, 1996, 34, 392-399.	2.6	8
58	Methodology for Implementing Fracture Mechanics in Global Structural Design of Aircraft. Journal of Aircraft, 1998, 35, 131-138.	2.4	8
59	Robust design of mechanical systems via stochastic expansion. International Journal of Materials and Product Technology, 2006, 25, 127.	0.2	8
60	Tools for Conceptual Design and Engineering Analysis of Micro Air Vehicles. , 2009, , .		8
61	Solving Continuum Shape Sensitivity with Existing Tools for Nonlinear Aeroelastic Gust Analysis. , 2012, , .		8
62	Local continuum shape sensitivity with spatial gradient reconstruction for nonlinear analysis. Structural and Multidisciplinary Optimization, 2015, 51, 849-865.	3.5	8
63	Discrete Adjoint Formulation for Continuum Sensitivity Analysis. AIAA Journal, 2016, 54, 758-766.	2.6	8
64	Efficient Successive Reanalysis Technique for Engineering Structures. AIAA Journal, 2006, 44, 1883-1889.	2.6	7
65	Multidisciplinary Design for Flight Test of a Scaled Joined Wing SensorCraft. , 2010, , .		7
66	Design Optimization of a WR-90 Slotted Waveguide Antenna Stiffened Structures. , 2011, , .		7
67	Two forms of continuum shape sensitivity method for fluid-structure interaction problems. Journal of Fluids and Structures, 2016, 62, 46-64.	3.4	7
68	Structural Design of Wing Twist for Pitch Control of Joined Wing SensorCraft. , 2006, , .		6
69	Accelerated engineering design optimization using successive matrix inversion method. International Journal for Numerical Methods in Engineering, 2006, 66, 1361-1377.	2.8	6
70	The Least-Squares Finite Element Method Applied to Fluid-Structure Interaction Problems. , 2007, , .		6
71	Least-Squares Continuous Sensitivity Analysis of an Example Fluid-Structure Interaction Problem. , 2008, , .		6
72	Optimization process for configuration of flexible joined-wing. Structural and Multidisciplinary Optimization, 2009, 37, 265-277.	3.5	6

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73	Airworthiness Evaluation of a Scaled Joined-Wing Aircraft. , 2012, , .		6
74	Experimental Nonlinear Static Deflections of a Subscale Joined Wing. Journal of Aircraft, 2012, 49, 329-333.	2.4	6
75	Continuum Shape Sensitivity Method for Fluid Flow Around an Airfoil. , 2012, , .		6
76	Aeroelastic Shape Optimization of a Flapping Wing. , 2014, , .		6
77	Convergence Study of Local Continuum Sensitivity Method Using Spatial Gradient Reconstruction. AIAA Journal, 2016, 54, 1054-1067.	2.6	6
78	Unsteady Aerodynamic Stabilization of the Dynamics of Hingeless Rotor Blades in Hover. AIAA Journal, 2018, 56, 1298-1303.	2.6	6
79	Nonintrusive Continuum Sensitivity Analysis for Aerodynamic Shape Optimization. , 2014, , .		6
80	Designing a blended composite wing and fuselage. , 1996, , .		5
81	Sensor-Craft Structural Optimization and Analytical Certification. , 2005, , .		5
82	Wind Tunnel Testing of a Twisted Wing for Longitudinal Control in a Joined-Wing Aircraft. , 2007, , .		5
83	Enriched Multipoint Cubic Approximations for Large-Scale Optimization. , 2008, , .		5
84	Continuum Shape Sensitivity with Spatial Gradient Reconstruction of Built-up Structures. , 2013, , .		5
85	Reliability-Based Design Optimization under Imprecise Uncertainty. , 2005, , .		4
86	Design and Evaluation of Aeroelastically Tuned Joined-Wing SensorCraft Flight Test Article. , 2013, , .		4
87	Discrete Adjoint Formulation for Continuum Sensitivity Analysis. , 2015, , .		4
88	Continuum Sensitivity Analysis for Aeroelastic Shape Optimization. , 2016, , .		4
89	Generic High-Speed Vehicle Configuration Modeling and Optimization. , 2020, , .		4
90	Propagation of non-Gaussian stochastic behavior using the polynomial chaos expansion. , 2003, , 1896-1899.		4

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91	Sequential multipoint quadratic approximation for numerical optimization. , 2001, , .		4
92	Discrete-time, mixed-norm control synthesis applied to aircraft terrain following. Journal of Guidance, Control, and Dynamics, 1996, 19, 1088-1094.	2.8	3
93	Sensitivity Analysis of Structural Response Uncertainty Propagation Using Evidence Theory. , 2002, , .		3
94	Polynomial Chaos Expansion with Latin Hypercube Sampling for Predicting Response Variability. , 2003, , .		3
95	VIBRATION AND TRANSONIC FLUTTER ANALYSIS FOR F-16 STORES CONFIGURATION CLEARANCE. International Journal of Structural Stability and Dynamics, 2006, 06, 377-395.	2.4	3
96	Large Scale Optimization Using Multipoint Cubic Approximation. , 2007, , .		3
97	Scaling for a Static Nonlinear Response of a Joined-Wing Aircraft. , 2008, , .		3
98	Aeroelastic Scaling for Verification and Evaluation of Geometric Nonlinearity on a Joined-Wing Aircraft Model. , 2008, , .		3
99	Design for Flight Test of a Scaled Joined Wing SensorCraft. , 2011, , .		3
100	Aeroelastic Tailoring of Flapping Membrane Wings for Maximum Thrust and Propulsive Efficiency. , 2012, , .		3
101	Nonlinear Aeroelastic Scaled Model Optimization Using Equivalent Static Loads. , 2013, , .		3
102	Nonintrusive Continuum Sensitivity Analysis for Aerodynamic Shape Optimization. , 2015, , .		3
103	Aircraft Design Markup Language for Multidisciplinary Aircraft Design and Analysis. Journal of Aerospace Information Systems, 2015, 12, 267-283.	1.4	3
104	On a cellular developmental method for layout optimization via the two-point topological derivative. Structural and Multidisciplinary Optimization, 2021, 64, 2343.	3.5	3
105	Quadratic Multipoint Exponential Approximation: Surrogate Model for Large-Scale Optimization. , 2018, , 648-661.		3
106	Structural Design and Optimization of Slotted Waveguide Antenna Stiffened Structures under Compressive Load. , 2020, , 65-85.		3
107	A rank two Hessian matrix update for sequential quadratic approximation. , 1995, , .		2
108	Reliability Analysis of a Large Computational Model Using Polynomial Chaos Expansion. , 2003, , .		2

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109	Reliability based optimisation of engineering structures under imprecise information. International Journal of Materials and Product Technology, 2006, 25, 112.	0.2	2
110	Nonlinear Dynamic Response Structural Optimization of a Joined-Wing Using Equivalent Static Loads. , 2008, , .		2
111	Large-Scale Multidisciplinary Validation of Enriched Multipoint Cubic Approximations. , 2008, , .		2
112	Advantages and Disadvantages of a Simultaneously Coupled Least-Squares Finite Element Formulation for Fluid-Structure Interaction. , 2008, , .		2
113	Accuracy of Enriched Multipoint Cubic Approximations for Large-Scale Optimization. , 2010, , .		2
114	Thrust and Efficiency Optimization of a Harmonically Deforming Thin Airfoil for MAV Design. International Journal of Micro Air Vehicles, 2012, 4, 93-117.	1.3	2
115	Aeroelastic Shape Optimization of a Flapping Wing. , 2013, , .		2
116	Design of a Scaled Flight Test Vehicle Including Linear Aeroelastic Effects. , 2013, , .		2
117	A novel imaging technique for measuring kinematics of light-weight flexible structures. Review of Scientific Instruments, 2016, 87, 075108.	1.3	2
118	Shape Continuum Sensitivity Analysis using ASTROS and CAPS. , 2019, , .		2
119	Continuum Sensitivity Method for Aeroelastic Shape Design Problems. , 2012, , .		2
120	Slotted Waveguide Stress Concentration Factor. AIAA Journal, 2022, 60, 3844-3851.	2.6	2
121	Implementation of generalized optimality criteria in a multidisciplinary environment. Journal of Aircraft, 1990, 27, 1037-1042.	2.4	1
122	Methodology for implementing fracture mechanics in global structural design of aircraft. , 1996, , .		1
123	Multipoint Cubic Surrogate Functions for Sequential Approximate Optimization. , 2002, , .		1
124	An Efficient Successive Reanalysis Technique for Engineering Structures. , 2004, , .		1
125	Optimization of Stochastic Mechanical Systems using Polynomial Chaos Expansion. , 2004, , .		1
126	Least-Squares Continuous Sensitivity Equations for an Infinite Plate with a Hole. , 2008, , .		1

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127	Nonlinear Response Using a Simultaneous, Coupled Least-Squares Finite Element Formulation for Fluid-Structure Interaction. , 2008, , .		1
128	Thrust and Efficiency Optimization of a Harmonically Deforming Thin Airfoil for MAV Design. , 2011, , .		1
129	Aeroelastic Shape Optimization of a Plugging Plate. , 2012, , .		1
130	A Hybrid Quasi-steady CFD-Inflow Approach for Gust Response Analysis of Highly Flexible Aircraft. , 2012, , .		1
131	Biobjective optimization using direct search techniques. , 2013, , .		1
132	A Variational Principle for Unsteady Compressible Flow. , 2016, , .		1
133	Electromagnetic Modeling of Large Phased Arrays of Structurally Embedded Waveguides. , 2017, , .		1
134	Nonintrusive continuum sensitivity analysis for fluid applications. Journal of Computational Physics, 2020, 403, 109066.	3.8	1
135	Comment on "Improved First-Order Approximation of Eigenvalues and Eigenvectors". AIAA Journal, 1999, 37, 900-900.	2.6	0
136	Accelerated Engineering Design Optimization Using Successive Matrix Inversion Method. , 2004, , .		0
137	Parametric Representation and Shape Optimization of a Wing for Flapping Micro Air Vehicles. , 2011, , .		0
138	Aeroelastic Optimization of Membrane Prestress on a Flapping Wing. , 2012, , .		0
139	High Fidelity Nonlinear Aeroelastic Analysis for Scaled Vehicle Design. , 2012, , .		0
140	Reliability Based Structural Design using Continuum Sensitivity Analysis. , 2015, , .		0
141	Continuum shape sensitivity analysis for aeroelastic gust using an arbitrary lagrangian-eulerian reference frame. Structural and Multidisciplinary Optimization, 2018, 57, 1871-1887.	3.5	0
142	Continuum Shape Sensitivity Analysis for Aeroelastic Gust using an Arbitrary Lagrangian-Eulerian Reference Frame. , 2018, , .		0
143	Quadratic Multipoint Exponential Approximation for Optimization and Uncertainty Quantification. , 2019, , .		0
144	Slotted Waveguide Stress Concentration Factor. , 2021, , .		0

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145	On a cellular developmental method for layout optimization via multi-fidelity analyses and the two-point topological derivative. , 2021, , .		0
146	Uncertainty quantification using evidence theory with a cost-effective algorithm. , 2003, , 2197-2200.		0