Robert A Canfield

List of Publications by Year
in descending order

146 papers	2,121 citations	361413 20 h-index	289244 40 g-index
146 all docs	146 docs citations	146 times ranked	845 citing authors

#	Article	IF	Citations
1	Slotted Waveguide Stress Concentration Factor. AIAA Journal, 2022, 60, 3844-3851.	2.6	2
2	Slotted Waveguide Stress Concentration Factor. , 2021, , .		0
3	On a cellular developmental method for layout optimization via the two-point topological derivative. Structural and Multidisciplinary Optimization, 2021, 64, 2343.	3.5	3
4	On a cellular developmental method for layout optimization via multi-fidelity analyses and the two-point topological derivative. , 2021, , .		0
5	Nonintrusive continuum sensitivity analysis for fluid applications. Journal of Computational Physics, 2020, 403, 109066.	3.8	1
6	Generic High-Speed Vehicle Configuration Modeling and Optimization. , 2020, , .		4
7	Structural Design and Optimization of Slotted Waveguide Antenna Stiffened Structures under Compressive Load. , 2020, , 65-85.		3
8	Shape Continuum Sensitivity Analysis using ASTROS and CAPS. , 2019, , .		2
9	Quadratic Multipoint Exponential Approximation for Optimization and Uncertainty Quantification. , 2019, , .		0
10	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
11	Continuum Shape Sensitivity Analysis for Aeroelastic Gust using an Arbitrary Lagrangian-Eulerian Reference Frame. , 2018, , .		0
12	Unsteady Aerodynamic Stabilization of the Dynamics of Hingeless Rotor Blades in Hover. AIAA Journal, 2018, 56, 1298-1303.	2.6	6
13	Quadratic Multipoint Exponential Approximation: Surrogate Model for Large-Scale Optimization. , 2018, , 648-661.		3
14	Electromagnetic Modeling of Large Phased Arrays of Structurally Embedded Waveguides. , 2017, , .		1
15	A novel imaging technique for measuring kinematics of light-weight flexible structures. Review of Scientific Instruments, 2016, 87, 075108.	1.3	2
16	Discrete Adjoint Formulation for Continuum Sensitivity Analysis. AIAA Journal, 2016, 54, 758-766.	2.6	8
17	A Variational Principle for Unsteady Compressible Flow. , 2016, , .		1
18	Convergence Study of Local Continuum Sensitivity Method Using Spatial Gradient Reconstruction. AIAA Journal, 2016, 54, 1054-1067.	2.6	6

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19	Continuum Sensitivity Analysis for Aeroelastic Shape Optimization. , 2016, , .		4
20	Two forms of continuum shape sensitivity method for fluid–structure interaction problems. Journal of Fluids and Structures, 2016, 62, 46-64.	3.4	7
21	Aeroelastic Shape Optimization of a Flapping Wing. Journal of Aircraft, 2016, 53, 636-650.	2.4	9
22	Nonlinear Aeroelastic Scaled-Model Design. Journal of Aircraft, 2016, 53, 20-32.	2.4	22
23	Multiobjective optimization using an adaptive weighting scheme. Optimization Methods and Software, 2016, 31, 110-133.	2.4	10
24	Reliability Based Structural Design using Continuum Sensitivity Analysis. , 2015, , .		0
25	Nonintrusive Continuum Sensitivity Analysis for Aerodynamic Shape Optimization. , 2015, , .		3
26	Discrete Adjoint Formulation for Continuum Sensitivity Analysis. , 2015, , .		4
27	Local continuum shape sensitivity with spatial gradient reconstruction for nonlinear analysis. Structural and Multidisciplinary Optimization, 2015, 51, 849-865.	3.5	8
28	Aircraft Design Markup Language for Multidisciplinary Aircraft Design and Analysis. Journal of Aerospace Information Systems, 2015, 12, 267-283.	1.4	3
29	Aeroelastic Shape Optimization of a Flapping Wing. , 2014, , .		6
30	Integration of Geometric Sensitivity and Spatial Gradient Reconstruction for Aeroelastic Shape Optimization. , 2014, , .		9
31	Nonlinear Aeroelastic-Scaled-Model Optimization Using Equivalent Static Loads. Journal of Aircraft, 2014, 51, 1842-1851.	2.4	21
32	Local continuum shape sensitivity with spatial gradient reconstruction. Structural and Multidisciplinary Optimization, 2014, 50, 975-1000.	3.5	16
33	Nonintrusive Continuum Sensitivity Analysis for Aerodynamic Shape Optimization. , 2014, , .		6
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	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
36	Pareto Front Approximation Using a Hybrid Approach. Procedia Computer Science, 2013, 18, 521-530.	2.0	10

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37	Aeroelastic Shape Optimization of a Flapping Wing. , 2013, , .		2
38	Evaluation of Quasi-Static Gust Loads Certification Methods for High-Altitude Long-Endurance Aircraft. Journal of Aircraft, 2013, 50, 457-468.	2.4	14
39	Design of a Scaled Flight Test Vehicle Including Linear Aeroelastic Effects. , 2013, , .		2
40	Biobjective optimization using direct search techniques. , 2013, , .		1
41	Design and Evaluation of Aeroelastically Tuned Joined-Wing SensorCraft Flight Test Article. , 2013, , .		4
42	Nonlinear Aeroelastic Scaled Model Optimization Using Equivalent Static Loads. , 2013, , .		3
43	Continuum Shape Sensitivity with Spatial Gradient Reconstruction of Built-up Structures. , 2013, , .		5
44	Aeroelastic Optimization of Membrane Prestress on a Flapping Wing. , 2012, , .		0
45	Continuum Shape Sensitivity with Spatial Gradient Reconstruction of Nonlinear Aeroelastic Gust Response. , 2012, , .		10
46	Solving Continuum Shape Sensitivity with Existing Tools for Nonlinear Aeroelastic Gust Analysis. , 2012, , .		8
47	Aeroelastic Shape Optimization of a Pluging Plate. , 2012, , .		1
48	Airworthiness Evaluation of a Scaled Joined-Wing Aircraft. , 2012, , .		6
49	A Hybrid Quasi-steady CFD-Inflow Approach for Gust Response Analysis of Highly Flexible Aircraft. , 2012, , .		1
50	Experimental Nonlinear Static Deflections of a Subscale Joined Wing. Journal of Aircraft, 2012, 49, 329-333.	2.4	6
51	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
52	Aeroelastic Tailoring of Flapping Membrane Wings for Maximum Thrust and Propulsive Efficiency. , 2012, , .		3
53	Nonlinear Aeroelastic Scaling of a Joined Wing Aircraft. , 2012, , .		12
54	Continuum Shape Sensitivity Method for Fluid Flow Around an Airfoil. , 2012, , .		6

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55	Parametric Representation and Shape Optimization of Flapping Micro Air Vehicle Wings. International Journal of Micro Air Vehicles, 2012, 4, 179-202.	1.3	11
56	Aeroelastic Scaling of a Joined Wing for Nonlinear Geometric Stiffness. AIAA Journal, 2012, 50, 513-522.	2.6	31
57	High Fidelity Nonlinear Aeroelastic Analysis for Scaled Vehicle Design. , 2012, , .		0
58	Continuum Sensitivity Method for Aeroelastic Shape Design Problems. , 2012, , .		2
59	Thrust and Efficiency Optimization of a Harmonically Deforming Thin Airfoil for MAV Design. , 2011, , .		1
60	Continuum Shape Sensitivity for Nonlinear Transient Aeroelastic Gust Response. , 2011, , .		14
61	Design for Flight Test of a Scaled Joined Wing SensorCraft. , 2011, , .		3
62	Parametric Representation and Shape Optimization of a Wing for Flapping Micro Air Vehicles. , 2011, , .		0
63	Utility of Quasi-Static Gust Loads Certification Methods for Novel Configurations. , 2011, , .		10
64	Design Optimization of a WR-90 Slotted Waveguide Antenna Stiffened Structures. , 2011, , .		7
65	Joined-Wing Wind-Tunnel Test for Longitudinal Control via Aftwing Twist. Journal of Aircraft, 2010, 47, 1481-1489.	2.4	10
66	Least-Squares Continuous Sensitivity Shape Optimization for Structural Elasticity Applications. AIAA Journal, 2010, 48, 2752-2762.	2.6	11
67	Accuracy of Enriched Multipoint Cubic Approximations for Large-Scale Optimization. , 2010, , .		2
68	Fluid-Structure Transient Gust Response Sensitivity for a Nonlinear Joined Wing Model. , 2010, , .		12
69	Multidisciplinary Design for Flight Test of a Scaled Joined Wing SensorCraft. , 2010, , .		7
70	Nonlinear Dynamic Response Structural Optimization of a Joined-Wing Using Equivalent Static Loads. Journal of Aircraft, 2009, 46, 821-831.	2.4	21
71	Optimization process for configuration of flexible joined-wing. Structural and Multidisciplinary Optimization, 2009, 37, 265-277.	3.5	6
72	Design of a Scaled RPV for Investigation of Gust Response of Joined-Wing Sensorcraft. , 2009, , .		13

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73	Fluid-Structure Transient Gust Sensitivity Using Least-Squares Continuous Sensitivity Analysis. , 2009, , .		14
74	Tools for Conceptual Design and Engineering Analysis of Micro Air Vehicles. , 2009, , .		8
75	Alleviation of buffet-induced vibration using piezoelectric actuators. Computers and Structures, 2008, 86, 281-291.	4.4	16
76	Least-Squares Continuous Sensitivity Equations for an Infinite Plate with a Hole. , 2008, , .		1
77	Nonlinear Response Using a Simultaneous, Coupled Least-Squares Finite Element Formulation for Fluid-Structure Interaction. , 2008, , .		1
78	Least-Squares Continuous Sensitivity Analysis of an Example Fluid-Structure Interaction Problem. , 2008, , .		6
79	Enriched Multipoint Cubic Approximations for Large-Scale Optimization. , 2008, , .		5
80	Nonlinear Dynamic Response Structural Optimization of a Joined-Wing Using Equivalent Static Loads. , 2008, , .		2
81	Large-Scale Multidisciplinary Validation of Enriched Multipoint Cubic Approximations. , 2008, , .		2
82	Scaling for a Static Nonlinear Response of a Joined-Wing Aircraft. , 2008, , .		3
83	Advantages and Disadvantages of a Simultaneously Coupled Least-Squares Finite Element Formulation for Fluid-Structure Interaction. , 2008, , .		2
84	Continuous Sensitivity Analysis of Fluid-Structure Interaction Problems Using Least-Squares Finite Elements. , 2008, , .		13
85	Aeroelastic Scaling for Verification and Evaluation of Geometric Nonlinearity on a Joined-Wing Aircraft Model. , 2008, , .		3
86	Nonlinear Response Structural Optimization of a Joined Wing Using Equivalent Loads. AIAA Journal, 2008, 46, 2703-2713.	2.6	35
87	Structural Optimization of a Joined Wing Using Equivalent Static Loads. Journal of Aircraft, 2007, 44, 1302-1308.	2.4	34
88	Wind Tunnel Testing of a Twisted Wing for Longitudinal Control in a Joined-Wing Aircraft. , 2007, , .		5
89	Non-Linear Aeroelastic Scaling of a Joined-Wing Concept. , 2007, , .		12
90	Aeroelastic Scaling and Optimization of a Joined-Wing Aircraft Concept. , 2007, , .		18

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91	Large Scale Optimization Using Multipoint Cubic Approximation. , 2007, , .		3
92	The Least-Squares Finite Element Method Applied to Fluid-Structure Interation Problems. , 2007, , .		6
93	Efficient Successive Reanalysis Technique for Engineering Structures. AIAA Journal, 2006, 44, 1883-1889.	2.6	7
94	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
95	Structural Design of Wing Twist for Pitch Control of Joined Wing SensorCraft. , 2006, , .		6
96	Joined-Wing Sensor-Craft Configuration Design. Journal of Aircraft, 2006, 43, 1470-1478.	2.4	26
97	Reliability based optimisation of engineering structures under imprecise information. International Journal of Materials and Product Technology, 2006, 25, 112.	0.2	2
98	Robust design of mechanical systems via stochastic expansion. International Journal of Materials and Product Technology, 2006, 25, 127.	0.2	8
99	Sensitivity analysis of structural response uncertainty propagation using evidence theory. Structural and Multidisciplinary Optimization, 2006, 31, 270-279.	3.5	57
100	Accelerated engineering design optimization using successive matrix inversion method. International Journal for Numerical Methods in Engineering, 2006, 66, 1361-1377.	2.8	6
101	Estimation of structural reliability for Gaussian random fields. Structure and Infrastructure Engineering, 2006, 2, 161-173.	3.7	19
102	Joined-Wing Aeroelastic Design with Geometric Nonlinearity. Journal of Aircraft, 2005, 42, 832-848.	2.4	76
103	Sensor-Craft Structural Optimization and Analytical Certification. , 2005, , .		5
104	Reliability-Based Design Optimization under Imprecise Uncertainty. , 2005, , .		4
105	Structural reliability under non-Gaussian stochastic behavior. Computers and Structures, 2004, 82, 1113-1121.	4.4	63
106	Multipoint cubic surrogate function for sequential approximate optimization. Structural and Multidisciplinary Optimization, 2004, 27, 326.	3.5	13
107	An approximation approach for uncertainty quantification using evidence theory. Reliability Engineering and System Safety, 2004, 86, 215-225.	8.9	176
108	Comparison of evidence theory and Bayesian theory for uncertainty modeling. Reliability Engineering and System Safety, 2004, 85, 295-311.	8.9	83

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109	Epistemic uncertainty quantification techniques including evidence theory for large-scale structures. Computers and Structures, 2004, 82, 1101-1112.	4.4	160
110	Polynomial Chaos Expansion with Latin Hypercube Sampling for Estimating Response Variability. AIAA Journal, 2004, 42, 1191-1198.	2.6	177
111	Successive Matrix Inversion Method for Reanalysis of Engineering Structural Systems. AIAA Journal, 2004, 42, 1529-1535.	2.6	14
112	Joined-Wing Sensor-Craft Configuration Design. , 2004, , .		11
113	An Efficient Successive Reanalysis Technique for Engineering Structures. , 2004, , .		1
114	Optimization Process for Configuration of Flexible Joined-Wing. , 2004, , .		20
115	Accelerated Engineering Design Optimization Using Successive Matrix Inversion Method. , 2004, , .		0
116	Optimization of Stochastic Mechanical Systems using Polynomial Chaos Expansion. , 2004, , .		1
117	Polynomial Chaos Expansion with Latin Hypercube Sampling for Predicting Response Variability. , 2003, , .		3
118	SensorCraft Structural Optimization and Analytical Certification. , 2003, , .		19
119	Structurally Integrated Antennas on a Joined-Wing Aircraft. , 2003, , .		11
120	Aero-Structural Coupling and Sensitivity of a Joined-Wing SensorCraft. , 2003, , .		10
121	Uncertainty Quantification of Structural Response Using Evidence Theory. AIAA Journal, 2003, 41, 2062-2068.	2.6	60
122	Reliability Analysis of a Large Computational Model Using Polynomial Chaos Expansion. , 2003, , .		2
123	Propagation of non-Gaussian stochastic behavior using the polynomial chaos expansion. , 2003, , 1896-1899.		4
124	Uncertainty quantification using evidence theory with a cost-effective algorithm. , 2003, , 2197-2200.		0
125	A Joined-Wing Structural Weight Modeling Study. , 2002, , .		35
126	Sensitivity Analysis of Structural Response Uncertainty Propagation Using Evidence Theory. , 2002, , .		3

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127	Multipoint Cubic Surrogate Functions for Sequential Approximate Optimization. , 2002, , .		1
128	Sequential multipoint quadratic approximation for numerical optimization. , 2001, , .		4
129	Comment on "Improved First-Order Approximation of Eigenvalues and Eigenvectors". AIAA Journal, 1999, 37, 900-900.	2.6	0
130	Methodology for Implementing Fracture Mechanics in Global Structural Design of Aircraft. Journal of Aircraft, 1998, 35, 131-138.	2.4	8
131	Methodology for implementing fracture mechanics in global structural design of aircraft. , 1996, , .		1
132	Designing a blended composite wing and fuselage. , 1996, , .		5
133	A MATLAB toolbox for fixed-order, mixed-norm control synthesis. IEEE Control Systems, 1996, 16, 36-44.	0.8	11
134	MULTIVARIATE HERMITE APPROXIMATION FOR DESIGN OPTIMIZATION. International Journal for Numerical Methods in Engineering, 1996, 39, 787-803.	2.8	24
135	Discrete-time, mixed-norm control synthesis applied to aircraft terrain following. Journal of Guidance, Control, and Dynamics, 1996, 19, 1088-1094.	2.8	3
136	Finite element model tuning using automated structural optimization system software. AIAA Journal, 1996, 34, 392-399.	2.6	8
137	A rank two Hessian matrix update for sequential quadratic approximation. , 1995, , .		2
138	Integrated structural design and vibration suppression using independent modal space control. AIAA Journal, 1994, 32, 2053-2060.	2.6	33
139	Multipoint quadratic approximation for numerical optimization. , 1994, , .		12
140	Design of frames against buckling using a Rayleigh quotient approximation. AIAA Journal, 1993, 31, 1143-1149.	2.6	27
141	Implementation of generalized optimality criteria in a multidisciplinary environment. Journal of Aircraft, 1990, 27, 1037-1042.	2.4	1
142	High-quality approximation of eigenvalues in structural optimization. AIAA Journal, 1990, 28, 1116-1122.	2.6	80
143	ASTROS - A multidisciplinary automated structural design tool. Journal of Aircraft, 1990, 27, 1021-1027.	2.4	115
144	Structural Optimization with Stiffness and Frequency Constraints. Mechanics Based Design of Structures and Machines, 1989, 17, 95-110.	0.6	14

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145	Optimum design of structures with multiple constraints. AIAA Journal, 1988, 26, 78-85.	2.6	28
146	Structural Design Optimization Based on Reliability Analysis Using Evidence Theory. , 0, , .		10