

Derek A Paley

List of Publications by Year in descending order

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139
papers

4,487
citations

257101

24
h-index

118652

62
g-index

141
all docs

141
docs citations

141
times ranked

2569
citing authors

#	ARTICLE	IF	CITATIONS
1	Collective Motion, Sensor Networks, and Ocean Sampling. Proceedings of the IEEE, 2007, 95, 48-74.	16.4	730
2	Stabilization of Planar Collective Motion: All-to-All Communication. IEEE Transactions on Automatic Control, 2007, 52, 811-824.	3.6	421
3	Stabilization of Planar Collective Motion With Limited Communication. IEEE Transactions on Automatic Control, 2008, 53, 706-719.	3.6	373
4	Multi-AUV Control and Adaptive Sampling in Monterey Bay. IEEE Journal of Oceanic Engineering, 2006, 31, 935-948.	2.1	364
5	Coordinated control of an underwater glider fleet in an adaptive ocean sampling field experiment in Monterey Bay. Journal of Field Robotics, 2010, 27, 718-740.	3.2	258
6	Cooperative Control for Ocean Sampling: The Glider Coordinated Control System. IEEE Transactions on Control Systems Technology, 2008, 16, 735-744.	3.2	201
7	Oscillator Models and Collective Motion. IEEE Control Systems, 2007, 27, 89-105.	1.0	185
8	Control of coordinated patterns for ocean sampling. International Journal of Control, 2007, 80, 1186-1199.	1.2	172
9	Distributed flow estimation and closed-loop control of an underwater vehicle with a multi-modal artificial lateral line. Bioinspiration and Biomimetics, 2015, 10, 025002.	1.5	84
10	Collective Motion and Oscillator Synchronization. Lecture Notes in Control and Information Sciences, 0, , 189-205.	0.6	81
11	Reconstructing the flight kinematics of swarming and mating in wild mosquitoes. Journal of the Royal Society Interface, 2012, 9, 2624-2638.	1.5	72
12	Stabilization of Collective Motion in a Time-Invariant Flowfield. Journal of Guidance, Control, and Dynamics, 2009, 32, 771-779.	1.6	71
13	Three-dimensional reconstruction of the fast-start swimming kinematics of densely schooling fish. Journal of the Royal Society Interface, 2012, 9, 77-88.	1.5	71
14	Stabilization of symmetric formations to motion around convex loops. Systems and Control Letters, 2008, 57, 209-215.	1.3	57
15	Dynamic control of autonomous quadrotor flight in an estimated wind field. , 2013, , .		56
16	Multivehicle Coordination in an Estimated Time-Varying Flowfield. Journal of Guidance, Control, and Dynamics, 2011, 34, 177-191.	1.6	54
17	Stabilization of collective motion on a sphere. Automatica, 2009, 45, 212-216.	3.0	51
18	On Planar Discrete Elastic Rod Models for the Locomotion of Soft Robots. Soft Robotics, 2019, 6, 595-610.	4.6	48

#	ARTICLE	IF	CITATIONS
19	The effects of flow on schooling <i>Devario aequipinnatus</i> : school structure, startle response and information transmission. <i>Journal of Fish Biology</i> , 2014, 84, 1401-1421.	0.7	41
20	The spatiotemporal dynamics of rheotactic behavior depends on flow speed and available sensory information. <i>Journal of Experimental Biology</i> , 2013, 216, 4011-24.	0.8	38
21	Distributed flow sensing for closed-loop speed control of a flexible fish robot. <i>Bioinspiration and Biomimetics</i> , 2015, 10, 065001.	1.5	34
22	The Dance of Male <i>Anopheles gambiae</i> in Wild Mating Swarms. <i>Journal of Medical Entomology</i> , 2013, 50, 552-559.	0.9	32
23	Multivehicle Control in a Strong Flowfield with Application to Hurricane Sampling. <i>Journal of Guidance, Control, and Dynamics</i> , 2012, 35, 794-806.	1.6	29
24	An Empirical Model of Rotorcraft UAV Downwash for Disturbance Localization and Avoidance. , 2015, , .		27
25	Distributed Estimation for Motion Coordination in an Unknown Spatially Varying Flowfield. <i>Journal of Guidance, Control, and Dynamics</i> , 2013, 36, 894-898.	1.6	26
26	Onboard Flow Sensing for Downwash Detection and Avoidance with a Small Quadrotor Helicopter. , 2015, , .		26
27	Echinoderm-Inspired Tube Feet for Robust Robot Locomotion and Adhesion. <i>IEEE Robotics and Automation Letters</i> , 2018, 3, 2222-2228.	3.3	25
28	Data-Driven Estimation of the Unsteady Flowfield Near an Actuated Airfoil. <i>Journal of Guidance, Control, and Dynamics</i> , 2019, 42, 2279-2287.	1.6	25
29	Male motion coordination in anopheline mating swarms. <i>Scientific Reports</i> , 2014, 4, 6318.	1.6	24
30	Group Coordination and Cooperative Control of Steered Particles in the Plane. , 2006, , 217-232.		24
31	Observability-based Optimization of Coordinated Sampling Trajectories for Recursive Estimation of a Strong, Spatially Varying Flowfield. <i>Journal of Intelligent and Robotic Systems: Theory and Applications</i> , 2013, 70, 527-544.	2.0	23
32	Global bilinearization and controllability of control-affine nonlinear systems: A Koopman spectral approach. , 2017, , .		23
33	Model-based observer and feedback control design for a rigid Joukowski foil in a Kármán vortex street. <i>Bioinspiration and Biomimetics</i> , 2018, 13, 035001.	1.5	23
34	Three-Dimensional Motion Coordination in a Spatiotemporal Flowfield. <i>IEEE Transactions on Automatic Control</i> , 2010, 55, 2805-2810.	3.6	22
35	Backstepping control design for motion coordination of self-propelled vehicles in a flowfield. <i>International Journal of Robust and Nonlinear Control</i> , 2011, 21, 1452-1466.	2.1	22
36	Observer-Based Feedback Control for Stabilization of Collective Motion. <i>IEEE Transactions on Control Systems Technology</i> , 2013, 21, 1846-1857.	3.2	22

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37	Observability-based optimization for flow sensing and control of an underwater vehicle in a uniform flowfield. , 2013, , .		22
38	Distributed Multitarget Search and Track Assignment With Consensus-Based Coordination. IEEE Sensors Journal, 2015, 15, 864-875.	2.4	20
39	Stereoscopic video analysis of Anopheles gambiae behavior in the field: Challenges and opportunities. Acta Tropica, 2014, 132, S80-S85.	0.9	18
40	The pursuit strategy of predatory bluefish (<i>Pomatomus saltatrix</i>). Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20182934.	1.2	18
41	Bilinearization, Reachability, and Optimal Control of Control-Affine Nonlinear Systems: A Koopman Spectral Approach. IEEE Transactions on Automatic Control, 2022, 67, 2715-2728.	3.6	17
42	Collective Motion of Self-Propelled Particles: Stabilizing Symmetric Formations on Closed Curves. , 2006, , .		15
43	Mosquito-inspired distributed swarming and pursuit for cooperative defense against fast intruders. Autonomous Robots, 2019, 43, 1781-1799.	3.2	14
44	Cooperative control of an autonomous sampling network in an external flow field. , 2008, , .		13
45	A flexible, reaction-wheel-driven fish robot: Flow sensing and flow-relative control. , 2016, , .		13
46	Geometric Attitude and Position Control of a Quadrotor in Wind. Journal of Guidance, Control, and Dynamics, 2020, 43, 870-883.	1.6	13
47	3D reconstruction of fish schooling kinematics from underwater video. , 2010, , .		12
48	Multivehicle coverage control for a nonstationary spatiotemporal field. Automatica, 2014, 50, 1381-1390.	3.0	12
49	Probabilistic information transmission in a network of coupled oscillators reveals speed-accuracy trade-off in responding to threats. Chaos, 2016, 26, 116311.	1.0	12
50	State-feedback control of an internal rotor for propelling and steering a flexible fish-inspired underwater vehicle. , 2019, , .		12
51	Spatial models of bistability in biological collectives. , 2007, , .		11
52	Parallel Simulation of Transient Magnetorheological Direct Shear Flows Using Millions of Particles. IEEE Transactions on Magnetics, 2012, 48, 3517-3520.	1.2	11
53	Unsteady DMD-Based Flow Field Estimation From Embedded Pressure Sensors in an Actuated Airfoil. , 2019, , .		11
54	Probabilistic analytical modelling of predatorâ€“prey interactions in fishes. Journal of the Royal Society Interface, 2019, 16, 20180873.	1.5	11

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55	Bioinspired pursuit with a swimming robot using feedback control of an internal rotor. <i>Bioinspiration and Biomimetics</i> , 2020, 15, 035005.	1.5	11
56	UAV State and Parameter Estimation in Wind Using Calibration Trajectories Optimized for Observability. , 2021, 5, 1801-1806.		11
57	UAV coordination on convex curves in wind: An environmental sampling application. , 2009, , .		10
58	Three-dimensional motion coordination in a time-invariant flowfield. , 2009, , .		10
59	3D tracking of mating events in wild swarms of the malaria mosquito <i>Anopheles gambiae</i> . , 2011, 2011, 720-3.		10
60	Wake Sensing and Estimation for Control of Autonomous Aircraft in Formation Flight. <i>Journal of Guidance, Control, and Dynamics</i> , 2016, 39, 32-41.	1.6	10
61	Physics-inspired motion planning for information-theoretic target detection using multiple aerial robots. <i>Autonomous Robots</i> , 2017, 41, 231-241.	3.2	10
62	Multi-UAS path planning for non-uniform data collection in precision agriculture. , 2017, , .		10
63	Constrained Ulam Dynamic Mode Decomposition: Approximation of the Perron-Frobenius Operator for Deterministic and Stochastic Systems. , 2018, 2, 809-814.		10
64	Cooperative Mapping and Target Search Over an Unknown Occupancy Graph Using Mutual Information. <i>IEEE Robotics and Automation Letters</i> , 2020, 5, 1071-1078.	3.3	10
65	Geometric Gait Design for a Starfish-Inspired Robot Using a Planar Discrete Elastic Rod Model. <i>Advanced Intelligent Systems</i> , 2020, 2, 1900186.	3.3	10
66	Stabilization of collective motion in a time-invariant flowfield on a rotating sphere. , 2009, , .		9
67	Coordinated Perimeter Patrol with Minimum-Time Alert Response. , 2009, , .		9
68	Multi-vehicle control and optimization for spatiotemporal sampling. , 2011, , .		8
69	Performance improvement of IPMC flow sensors with a biologically-inspired cupula structure. <i>Proceedings of SPIE</i> , 2016, , .	0.8	8
70	Feedback-Linearizing Control for Velocity and Attitude Tracking of an ROV with Thruster Dynamics Containing Input Dead Zones. , 2019, , .		8
71	Mobile Sensor Networks and Control: Adaptive Sampling of Spatiotemporal Processes. <i>Annual Review of Control, Robotics, and Autonomous Systems</i> , 2020, 3, 91-114.	7.5	8
72	Stabilization of Collective Motion in a Uniform and Constant Flow Field. , 2008, , .		7

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73	Unmanned Aerial Vehicle Coordination on Closed Convex Paths in Wind. Journal of Guidance, Control, and Dynamics, 2010, 33, 1946-1951.	1.6	7
74	Robotic Fish. Mechanical Engineering, 2016, 138, S2-S5.	0.0	7
75	Tracking Performance of Model-Based Thruster Control of a Remotely Operated Underwater Vehicle. IEEE Journal of Oceanic Engineering, 2021, 46, 389-401.	2.1	7
76	Cooperative Control of Unmanned Vehicles in a Time-Varying Flowfield. , 2009, , .		6
77	Optimal sensor coordination for multitarget search and track assignment. IEEE Transactions on Aerospace and Electronic Systems, 2014, 50, 2313-2320.	2.6	6
78	Touring invariant-set boundaries of a two-vortex system using streamline control. , 2015, , .		6
79	Dynamics of a Rotor-Pendulum With a Small, Stiff Propeller in Wind. , 2016, , .		6
80	Observability-based path-planning and flow-relative control of a bioinspired sensor array in a Karman vortex street. , 2017, , .		6
81	Non-Gaussian Estimation and Dynamic Output Feedback Using the Gaussian Mixture Kalman Filter. Journal of Guidance, Control, and Dynamics, 2021, 44, 15-24.	1.6	6
82	Global Bilinearization and Reachability Analysis of Control-Affine Nonlinear Systems. Lecture Notes in Control and Information Sciences, 2020, , 81-98.	0.6	6
83	Backstepping control design for motion coordination of self-propelled vehicles. , 2010, , .		5
84	Massively Parallel Simulations of Chain Formation and Restructuring Dynamics in a Magnetorheological Fluid. , 2011, , .		5
85	Putting the fish in the fish tank: Immersive VR for animal behavior experiments. , 2012, , .		5
86	Incorporating prior knowledge in observability-based path planning for ocean sampling. Systems and Control Letters, 2016, 97, 169-175.	1.3	5
87	Robust Lyapunov Control Design for Bioinspired Pursuit With Autonomous Hovercraft. IEEE Transactions on Control Systems Technology, 2017, 25, 509-520.	3.2	5
88	Downwash Detection and Avoidance with Small Quadrotor Helicopters. Journal of Guidance, Control, and Dynamics, 2017, 40, 692-701.	1.6	5
89	Mosquito-inspired swarming for decentralized pursuit with autonomous vehicles. , 2017, , .		5
90	Onboard Flow Sensing for Multi-Rotor Pitch Control in Wind. Journal of Guidance, Control, and Dynamics, 2018, 41, 1196-1201.	1.6	5

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91	Optimal control of a 2D diffusion-advection process with a team of mobile actuators under jointly optimal guidance. <i>Automatica</i> , 2021, 133, 109866.	3.0	5
92	Vision-based estimation of three-dimensional position and pose of multiple underwater vehicles. , 2009, , .		4
93	Reduced-Order Dynamic Modeling and Stabilizing Control of a Micro-Helicopter. , 2009, , .		4
94	Distributed Estimation for Motion Coordination in an Unknown Spatiotemporal Flowfield. , 2011, , .		4
95	Wake Estimation and Optimal Control for Autonomous Aircraft in Formation Flight. , 2013, , .		4
96	Lyapunov stability analysis of a mosquito-inspired swarm model. , 2015, , .		4
97	Multi-target tracking and data association on road networks using unmanned aerial vehicles. , 2017, , .		4
98	Geometric Control of Quadrotor Attitude in Wind With Flow Sensing and Thrust Constraints. , 2017, , .		4
99	Data-driven estimation using an Echo-State Neural Network equipped with an Ensemble Kalman Filter. , 2021, , .		4
100	Height Estimation and Control of Rotorcraft in Ground Effect Using Spatially Distributed Pressure Sensing. <i>Journal of the American Helicopter Society</i> , 2016, 61, 1-14.	0.5	4
101	A multi-vehicle testbed for underwater motion coordination. , 2010, , .		3
102	Distributed optimization for radar mission coordination. , 2012, , .		3
103	Distributed multi-target search and track assignment using consensus-based coordination. , 2013, , .		3
104	Flow sensing, estimation and control for rotorcraft in ground effect. , 2015, , .		3
105	Cooperative Bayesian target detection on a real road network using aerial vehicles. , 2016, , .		3
106	Geometric Gait Design for a Starfish-Inspired Robot With Curvature-Controlled Soft Actuators. , 2017, , .		3
107	Non-gaussian estimation and observer-based feedback using the Gaussian Mixture Kalman and Extended Kalman Filters. , 2017, , .		3
108	Optimal control of a 1D diffusion process with a team of mobile actuators under jointly optimal guidance. , 2020, , .		3

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109	A 3D underwater robotic collective called Blueswarm. <i>Science Robotics</i> , 2021, 6, .	9.9	3
110	Dynamic Modeling and Simulation of Electric Scooter Interactions With a Pedestrian Crowd Using a Social Force Model. <i>IEEE Transactions on Intelligent Transportation Systems</i> , 2022, 23, 16448-16461.	4.7	3
111	Critical damping in a kinetic interaction network. , 2010, , .		2
112	Distributed Flow Sensing Using Bayesian Estimation for a Flexible Fish Robot. , 2015, , .		2
113	Bio-inspired pursuit with autonomous hovercraft using Lyapunov-based control. , 2015, , .		2
114	Non-Gaussian estimation of a two-vortex flow using a Lagrangian sensor guided by output feedback control. , 2016, , .		2
115	The AUSS FIREfly: A Distributed Sensing and Co-ordination Platform for First-Year Engineering Education. , 2017, , .		2
116	Geometric control of a quadrotor in wind with flow sensing and thrust constraints: Attitude and position control. , 2019, , .		2
117	Geometric Gait Design for a Starfish-Inspired Robot Using a Planar Discrete Elastic Rod Model. <i>Advanced Intelligent Systems</i> , 2020, 2, 2070062.	3.3	2
118	Feedback Control and Parameter Estimation for Lift Maximization of a Pitching Airfoil. <i>Journal of Guidance, Control, and Dynamics</i> , 2021, 44, 587-594.	1.6	2
119	Active Singularities for Multivehicle Motion Planning in an N-Vortex System. <i>Lecture Notes in Computer Science</i> , 2015, , 334-346.	1.0	2
120	Multi-Vehicle Coordination in an Unknown Flowfield. , 2010, , .		1
121	Multi-vehicle Control in a Strong Flowfield with Application to Hurricane Sampling. , 2011, , .		1
122	Synchronization on the N-torus with noisy measurements. , 2011, , .		1
123	Motion coordination of planar rigid bodies. , 2011, , .		1
124	Tip-Vortex Localization for Cross-Stream Position Control of a Multi-Hole Probe Relative to a Stationary Wing in a Free-Jet Wind Tunnel. , 2017, , .		1
125	Competing Swarms of Autonomous Vehicles: Intruders Versus Guardians. , 2017, , .		1
126	Microfluidic Circuit Dynamics and Control for Caterpillar-Inspired Locomotion in a Soft Robot. , 2018, , .		1

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127	Closed-loop control of the position of a single vortex relative to an actuated cylinder. , 2019, , .		1
128	Feedback Control of a Soft Swinging Appendage. , 2020, , .		1
129	Distributed Control of a Planar Discrete Elastic Rod Model for Caterpillar-Inspired Locomotion. , 2019, , .		1
130	Distributed Control of a Planar Discrete Elastic Rod for Eel-Inspired Underwater Locomotion. , 2021, , 261-279.		1
131	Planar Formation Control of a School of Robotic Fish: Theory and Experiments. Frontiers in Control Engineering, 2021, 2, .	0.4	1
132	Burrowing Locomotion via Crack Propagation of a Bio-inspired Soft Robot. IFAC-PapersOnLine, 2021, 54, 128-133.	0.5	1
133	Observer-based feedback control for stabilization of collective motion. , 2011, , .		0
134	Dynamic Altitude Control for Motion Coordination in an Estimated Shear Flow. , 2012, , .		0
135	Optimal Sampling of Nonstationary Spatiotemporal Fields Using a Mobile Sensor Network*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 186-191.	0.4	0
136	Non-deterministic Predator-Prey Model with Accelerating Prey. , 2018, , .		0
137	Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. IEEE Journal of Oceanic Engineering, 2020, 45, 1203-1218.	2.1	0
138	Output Feedback Control for Lift Maximization of a Pitching Airfoil. , 2020, , .		0
139	Multi-Target Detection and Tracking in a Heterogeneous Environment with Multiple Resource-Constrained Sensors. , 2022, , .		0