Derek A Paley

List of Publications by Year
in descending order

139 papers	4,487 citations	257450 24 h-index	118850 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.	21.3	730
2	Stabilization of Planar Collective Motion: All-to-All Communication. IEEE Transactions on Automatic Control, 2007, 52, 811-824.	5.7	421
3	Stabilization of Planar Collective Motion With Limited Communication. IEEE Transactions on Automatic Control, 2008, 53, 706-719.	5.7	373
4	Multi-AUV Control and Adaptive Sampling in Monterey Bay. IEEE Journal of Oceanic Engineering, 2006, 31, 935-948.	3.8	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.	6.0	258
6	Cooperative Control for Ocean Sampling: The Glider Coordinated Control System. IEEE Transactions on Control Systems Technology, 2008, 16, 735-744.	5.2	201
7	Oscillator Models and Collective Motion. IEEE Control Systems, 2007, 27, 89-105.	0.8	185
8	Control of coordinated patterns for ocean sampling. International Journal of Control, 2007, 80, 1186-1199.	1.9	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.	2.9	84
10	Collective Motion and Oscillator Synchronization. Lecture Notes in Control and Information Sciences, 0, , 189-205.	1.0	81
11	Reconstructing the flight kinematics of swarming and mating in wild mosquitoes. Journal of the Royal Society Interface, 2012, 9, 2624-2638.	3.4	72
12	Stabilization of Collective Motion in a Time-Invariant Flowfield. Journal of Guidance, Control, and Dynamics, 2009, 32, 771-779.	2.8	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.	3.4	71
14	Stabilization of symmetric formations to motion around convex loops. Systems and Control Letters, 2008, 57, 209-215.	2.3	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.	2.8	54
17	Stabilization of collective motion on a sphere. Automatica, 2009, 45, 212-216.	5.0	51
18	On Planar Discrete Elastic Rod Models for the Locomotion of Soft Robots. Soft Robotics, 2019, 6, 595-610.	8.0	48

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19	The effects of flow on schooling Devario aequipinnatus: school structure, startle response and information transmission. Journal of Fish Biology, 2014, 84, 1401-1421.	1.6	41
20	The spatiotemporal dynamics of rheotactic behavior depends on flow speed and available sensory information. Journal of Experimental Biology, 2013, 216, 4011-24.	1.7	38
21	Distributed flow sensing for closed-loop speed control of a flexible fish robot. Bioinspiration and Biomimetics, 2015, 10, 065001.	2.9	34
22	The Dance of MaleAnopheles gambiaein Wild Mating Swarms. Journal of Medical Entomology, 2013, 50, 552-559.	1.8	32
23	Multivehicle Control in a Strong Flowfield with Application to Hurricane Sampling. Journal of Guidance, Control, and Dynamics, 2012, 35, 794-806.	2.8	29
24	An Empirical Model of Rotorcrafy UAV Downwash for Disturbance Localization and Avoidance. , 2015, , .		27
25	Distributed Estimation for Motion Coordination in an Unknown Spatially Varying Flowfield. Journal of Guidance, Control, and Dynamics, 2013, 36, 894-898.	2.8	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. IEEE Robotics and Automation Letters, 2018, 3, 2222-2228.	5.1	25
28	Data-Driven Estimation of the Unsteady Flowfield Near an Actuated Airfoil. Journal of Guidance, Control, and Dynamics, 2019, 42, 2279-2287.	2.8	25
29	Male motion coordination in anopheline mating swarms. Scientific Reports, 2014, 4, 6318.	3.3	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. Journal of Intelligent and Robotic Systems: Theory and Applications, 2013, 70, 527-544.	3.4	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 KÃ¡rmÃ¡n vortex street. Bioinspiration and Biomimetics, 2018, 13, 035001.	2.9	23
34	Three-Dimensional Motion Coordination in a Spatiotemporal Flowfield. IEEE Transactions on Automatic Control, 2010, 55, 2805-2810.	5.7	22
35	Backstepping control design for motion coordination of selfâ€propelled vehicles in a flowfield. International Journal of Robust and Nonlinear Control, 2011, 21, 1452-1466.	3.7	22
36	Observer-Based Feedback Control for Stabilization of Collective Motion. IEEE Transactions on Control Systems Technology, 2013, 21, 1846-1857.	5.2	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.	4.7	20
39	Stereoscopic video analysis of Anopheles gambiae behavior in the field: Challenges and opportunities. Acta Tropica, 2014, 132, S80-S85.	2.0	18
40	The pursuit strategy of predatory bluefish (Pomatomus saltatrix). Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20182934.	2.6	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.	5.7	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.	4.8	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.	2.8	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.	5.0	12
49	Probabilistic information transmission in a network of coupled oscillators reveals speed-accuracy trade-off in responding to threats. Chaos, 2016, 26, 116311.	2.5	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.	2.1	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.	3.4	11

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55	Bioinspired pursuit with a swimming robot using feedback control of an internal rotor. Bioinspiration and Biomimetics, 2020, 15, 035005.	2.9	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 Anopheles gambiae. , 2011, 2011, 720-3.		10
60	Wake Sensing and Estimation for Control of Autonomous Aircraft in Formation Flight. Journal of Guidance, Control, and Dynamics, 2016, 39, 32-41.	2.8	10
61	Physics-inspired motion planning for information-theoretic target detection using multiple aerial robots. Autonomous Robots, 2017, 41, 231-241.	4.8	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. IEEE Robotics and Automation Letters, 2020, 5, 1071-1078.	5.1	10
65	Geometric Gait Design for a Starfishâ€Inspired Robot Using a Planar Discrete Elastic Rod Model. Advanced Intelligent Systems, 2020, 2, 1900186.	6.1	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. Proceedings of SPIE, 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. Annual Review of Control, Robotics, and Autonomous Systems, 2020, 3, 91-114.	11.8	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.	2.8	7
74	Robotic Fish. Mechanical Engineering, 2016, 138, S2-S5.	0.1	7
75	Tracking Performance of Model-Based Thruster Control of a Remotely Operated Underwater Vehicle. IEEE Journal of Oceanic Engineering, 2021, 46, 389-401.	3.8	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.	4.7	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.	2.8	6
82	Global Bilinearization and Reachability Analysis of Control-Affine Nonlinear Systems. Lecture Notes in Control and Information Sciences, 2020, , 81-98.	1.0	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.	2.3	5
87	Robust Lyapunov Control Design for Bioinspired Pursuit With Autonomous Hovercraft. IEEE Transactions on Control Systems Technology, 2017, 25, 509-520.	5.2	5
88	Downwash Detection and Avoidance with Small Quadrotor Helicopters. Journal of Guidance, Control, and Dynamics, 2017, 40, 692-701.	2.8	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.	2.8	5

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91	Optimal control of a 2D diffusionâ€“advection process with a team of mobile actuators under jointly optimal guidance. Automatica, 2021, 133, 109866.	5.0	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. Journal of the American Helicopter Society, 2016, 61, 1-14.	0.8	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. Science Robotics, 2021, 6, .	17.6	3
110	Dynamic Modeling and Simulation of Electric Scooter Interactions With a Pedestrian Crowd Using a Social Force Model. IEEE Transactions on Intelligent Transportation Systems, 2022, 23, 16448-16461.	8.0	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 Starfishâ€Inspired Robot Using a Planar Discrete Elastic Rod Model. Advanced Intelligent Systems, 2020, 2, 2070062.	6.1	2
118	Feedback Control and Parameter Estimation for Lift Maximization of a Pitching Airfoil. Journal of Guidance, Control, and Dynamics, 2021, 44, 587-594.	2.8	2
119	Active Singularities for Multivehicle Motion Planning in an N-Vortex System. Lecture Notes in Computer Science, 2015, , 334-346.	1.3	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, .	0.6	1
132	Burrowing Locomotion via Crack Propagation of a Bio-inspired Soft Robot. IFAC-PapersOnLine, 2021, 54, 128-133.	0.9	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.	3.8	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