Amit K Sanyal

List of Publications by Year
in descending order

114 papers	2,345 citations	361045 20 h-index	253896 43 g-index
115 all docs	115 docs citations	115 times ranked	1045 citing authors

#	Article	IF	Citations
1	Rigid-Body Attitude Control. IEEE Control Systems, 2011, 31, 30-51.	1.0	505
2	Inertia-Free Spacecraft Attitude Tracking with Disturbance Rejection and Almost Global Stabilization. Journal of Guidance, Control, and Dynamics, 2009, 32, 1167-1178.	1.6	169
3	Asymptotic Tracking Control for Spacecraft Formation Flying with Decentralized Collision Avoidance. Journal of Guidance, Control, and Dynamics, 2015, 38, 587-600.	1.6	116
4	Global optimal attitude estimation using uncertainty ellipsoids. Systems and Control Letters, 2008, 57, 236-245.	1.3	97
5	Decentralized Consensus Control of a Rigid-Body Spacecraft Formation with Communication Delay. Journal of Guidance, Control, and Dynamics, 2016, 39, 838-851.	1.6	94
6	An Almost Global Tracking Control Scheme for Maneuverable Autonomous Vehicles and its Discretization. IEEE Transactions on Automatic Control, 2011, 56, 457-462.	3.6	80
7	Finite-time control for spacecraft body-fixed hovering over an asteroid. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 506-520.	2.6	73
8	Almost global finite-time stabilization of rigid body attitude dynamics using rotation matrices. International Journal of Robust and Nonlinear Control, 2016, 26, 2008-2022.	2.1	71
9	Rigid body attitude estimation based on the Lagrangeâ€“dâ€™Alembert principle. Automatica, 2014, 50, 2570-2577.	3.0	63
10	Almost global asymptotic tracking control for spacecraft body-fixed hovering over an asteroid. Aerospace Science and Technology, 2014, 38, 105-115.	2.5	62
11	Inertia-Free Spacecraft Attitude Control Using Reaction Wheels. Journal of Guidance, Control, and Dynamics, 2013, 36, 1425-1439.	1.6	45
12	Finite-time stabilisation of simple mechanical systems using continuous feedback. International Journal of Control, 2015, 88, 783-791.	1.2	44
13	Coupled orbitâ€“attitude dynamics and relative state estimation of spacecraft near small Solar System bodies. Advances in Space Research, 2016, 57, 1747-1761.	1.2	44
14	Almost Global Robust Attitude Tracking Control of Spacecraft in Gravity. , 2008, , .		42
15	A Lie group variational integrator for rigid body motion in SE(3) with applications to underwater vehicle dynamics. , 2010, , .		39
16	Geometric structure-preserving optimal control of a rigid body. Journal of Dynamical and Control Systems, 2009, 15, 307-330.	0.4	37
17	A Discrete Variational Integrator for Optimal Control Problems on SO(3). , 2006, , .		33
18	Stability and Stabilization of Relative Equilibria of Dumbbell Bodies in Central Gravity. Journal of Guidance, Control, and Dynamics, 2005, 28, 833-842.	1.6	30

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19	Rigid body pose estimation based on the Lagrangeâ€“dâ€™Alembert principle. Automatica, 2016, 71, 78-88.	3.0	26
20	A variational problem on Stiefel manifolds. Nonlinearity, 2006, 19, 2247-2276.	0.6	25
21	Integrated Guidance and Feedback Control of Underactuated Robotics System in SE(3). Journal of Intelligent and Robotic Systems: Theory and Applications, 2018, 89, 251-263.	2.0	25
22	Optimal Control and Geodesics on Quadratic Matrix Lie Groups. Foundations of Computational Mathematics, 2008, 8, 469-500.	1.5	23
23	Attitude State Estimation with Multirate Measurements for Almost Global Attitude Feedback Tracking. Journal of Guidance, Control, and Dynamics, 2012, 35, 868-880.	1.6	23
24	Trajectory Tracking Near Small Bodies Using Only Attitude Control. Journal of Guidance, Control, and Dynamics, 2019, 42, 109-122.	1.6	20
25	Spacecraft Attitude Fractional Feedback Control Using Rotation Matrices and Exponential Coordinates. Journal of Guidance, Control, and Dynamics, 2018, 41, 2185-2198.	1.6	19
26	Autonomous Waypoint Planning, Optimal Trajectory Generation and Nonlinear Tracking Control for Multi-rotor UAVs. , 2019, , .		18
27	Nonlinear observer for 3D rigid body motion. , 2013, , .		16
28	Comparison of an attitude estimator based on the Lagrange-d'Alembert principle with some state-of-the-art filters. , 2015, , .		16
29	Adaptive tracking of angular velocity for a planar rigid body with unknown models for inertia and input nonlinearity. IEEE Transactions on Control Systems Technology, 2006, 14, 613-627.	3.2	14
30	Guidance and Control for Spacecraft Autonomous Chasing and Close Proximity Maneuvers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 753-758.	0.4	14
31	Almost global finite time stabilization of rigid body attitude dynamics. , 2013, , .		14
32	Kinematically Coupled Relative Spacecraft Motion Control Using the State-Dependent Riccati Equation Method. Journal of Aerospace Engineering, 2015, 28, .	0.8	14
33	Integrated Guidance and Nonlinear Feedback Control of Underactuated Unmanned Aerial Vehicles in SE(3). , 2017, , .		14
34	GPS-denied relative motion estimation for fixed-wing UAV using the variational pose estimator. , 2015, , .		13
35	Attitude stabilization of rigid spacecraft with minimal attitude coordinates and unknown time-varying delay. Aerospace Science and Technology, 2015, 46, 412-421.	2.5	13
36	Stabilization of rigid body attitude motion with time-delayed feedback. Aerospace Science and Technology, 2017, 68, 509-517.	2.5	13

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37	Global Attitude Estimation using Single Direction Measurements. Proceedings of the American Control Conference, 2007, , .	0.0	12
38	Dynamics and Balance Control of the Reaction Mass Pendulum: A Three-Dimensional Multibody Pendulum With Variable Body Inertia. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2014, 136, .	0.9	12
39	Nonlinear Observer for 3D Rigid Body Motion Estimation Using Doppler Measurements. IEEE Transactions on Automatic Control, 2016, 61, 3580-3585.	3.6	12
40	Embedded geodesic problems and optimal control for matrix Lie groups. Journal of Geometric Mechanics, 2011, 3, 197-223.	0.5	12
41	Determination of relative motion of a space object from simultaneous measurements of range and range rate. , 2014, , .		11
42	Dynamics and Control of Spacecraft With a Generalized Model of Variable Speed Control Moment Gyroscopes. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2015, 137, .	0.9	11
43	Finite-time stable tracking control for a class of underactuated aerial vehicles in SE(3). , 2017, , .		11
44	Attitude Tracking Control of a Small Satellite in Low Earth Orbit. , 2009, , .		10
45	Unscented state estimation for rigid body motion on SE(3). , 2012, , .		10
46	Dynamics and Control of a Six Degrees of Freedom Ground Simulator for Autonomous Rendezvous and Proximity Operation of Spacecraft. , 2012, , .		9
47	Analysis of Orbit-Attitude Coupling of Spacecraft Near Small Solar System Bodies. , 2015, , .		9
48	Landing of hopping rovers on Irregularly-shaped small bodies using attitude control. Advances in Space Research, 2020, 65, 2674-2691.	1.2	9
49	Nonlinear Output Tracking and Disturbance Rejection for Autonomous Close-Range Rendezvous and Docking of Spacecraft. Transactions of the Japan Society for Aeronautical and Space Sciences, 2014, 57, 225-237.	0.4	9
50	Robust feedback tracking of autonomous underwater vehicles with disturbance rejection. , 2009, , .		8
51	Rigid body motion estimation based on the Lagrange-d'Alembert principle. , 2015, , .		8
52	Finite-time Attitude Consensus Control of a Multi-Agent Rigid Body System. , 2020, , .		8
53	Finite-time stable estimator for attitude motion in the presence of bias in angular velocity measurements. Automatica, 2021, 132, 109815.	3.0	8
54	Attitude feedback tracking with optimal attitude state estimation. , 2010, , .		7

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55	Almost global finite-time stable observer for rigid body attitude dynamics. , 2014, , .		7
56	Discrete-time rigid body attitude state estimation based on the discrete Lagrange-d'Alembert principle. , 2015, , .		7
57	Model Free Nonlinear Control with Finite-Time Estimation Applied to Closed-Loop Electrical Stimulation Induced Cycling. , 2020, , .		7
58	Deterministic Global Attitude Estimation. , 2006, , .		6
59	Inertia-free spacecraft attitude trajectory tracking with internal-model-based disturbance rejection and almost global stabilization. , 2009, , .		6
60	Estimation of Dynamics of Space Objects from Visual Feedback during Proximity Operations. , 2014, , .		6
61	Unscented state estimation for rigid body attitude motion with a finite-time stable observer. , 2016, , .		6
62	Feedback tracking control schemes for a class of underactuated vehicles in SE(3). , 2017, , .		6
63	Guidance and Control for Spacecraft Autonomous Rendezvous and Proximity Maneuvers using a Geometric Mechanics Framework. , 2012, , .		5
64	A Nonlinear Observer Design for a Rigid Body in the Proximity of a Spherical Asteroid. , 2013, , .		5
65	Delayed Feedback Asymptotic Stabilization of Rigid Body Attitude Motion for Large Rotationsâˆ—â€”Financial support from the National Science Foundation under Grant No. CMMIâ€“1131646 is gratefully acknowledged.. IFAC-PapersOnLine, 2015, 48, 81-86.	0.5	5
66	Robust stabilization of rigid body attitude motion in the presence of a stochastic input torque. , 2015, , .		5
67	The variational attitude estimator in the presence of bias in angular velocity measurements. , 2016, , .		5
68	The Reaction Mass Biped: Geometric Mechanics and Control. Journal of Intelligent and Robotic Systems: Theory and Applications, 2018, 89, 155-173.	2.0	5
69	Fast and Accurate Trajectory Tracking for Unmanned Aerial Vehicles based on Deep Reinforcement Learning. , 2019, , .		5
70	Discrete Finite-time Stable Attitude Tracking Control of Unmanned Vehicles on SO(3). , 2020, , .		5
71	Discrete-time data-driven control with HÃ¶lder-continuous real-time learning. International Journal of Control, 2022, 95, 2175-2187.	1.2	5
72	Rigid Body Geometric Attitude Estimator using Multi-rate Sensors. , 2020, , .		5

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73	Dynamics of multibody systems in planar motion in a central gravitational field. Dynamical Systems, 2004, 19, 303-343.	0.2	4
74	Decentralized guidance and control for spacecraft formation flying using virtual leader configuration. , 2013, , .		4
75	The Reaction Mass Biped: Equations of motion, hybrid model for walking and trajectory tracking control. , 2015, , .		4
76	Design of an Adaptive Singularity-free Control Moment Gyroscope (ASCMG) actuator for agile and precise attitude control of cubesat. , 2016, , .		4
77	Almost Global Stochastic Stabilization of Attitude Motion with Unknown Multiplicative Diffusion Coefficient. , 2016, , .		4
78	Trajectory generation on SE(3) with applications to a class of underactuated vehicles. , 2017, , .		4
79	Variational Attitude and Pose Estimation Using the Lagrange-dâ€™ Alembert Principle. , 2018, , .		4
80	Discrete-time Stable Tracking Control of Underactuated Rigid Body Systems on SE(3). , 2018, , .		4
81	Trajectory Tracking Control For Underactuated Thrust-Propelled Aerial Vehicles. IFAC-PapersOnLine, 2018, 51, 555-560.	0.5	4
82	Finite time stable attitude estimation of rigid bodies with unknown dynamics. Asian Journal of Control, 2019, 21, 1522-1530.	1.9	4
83	Trajectory Generation on SE(3) for an Underactuated Vehicle with Pointing Direction Constraints. , 2019, , .		4
84	Dynamics and Control of the Reaction Mass Pendulum (RMP) as a 3D Multibody System: Application to Humanoid Modeling. , 2011, , .		3
85	Geometric approach to attitude dynamics and control of spacecraft with variable speed control moment gyroscopes. , 2013, , .		3
86	Geometric Mechanics Based Modeling of the Attitude Dynamics and Control of Spacecraft With Variable Speed Control Moment Gyroscopes. , 2013, , .		3
87	An Observer for Rigid Body Motion With Almost Global Finite-Time Convergence. , 2014, , .		3
88	Optimal interior Earthâ€“Moon Lagrange point transfer trajectories using mixed impulsive and continuous thrust. Aerospace Science and Technology, 2014, 39, 281-292.	2.5	3
89	Adaptive Singularity-Free Control Moment Gyroscopes. Journal of Guidance, Control, and Dynamics, 2018, 41, 2416-2424.	1.6	3
90	Finite Time Stable Attitude and Angular Velocity Bias Estimation for Rigid Bodies With Unknown Dynamics. , 2019, , .		3

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91	Finite-time stable tracking control for an underactuated system in SE(3) in discrete time. International Journal of Control, 2022, 95, 1106-1121.	1.2	3
92	Robust Tracking Control of Autonomous Underwater Vehicles in the Presence of Disturbance Inputs. , 2009, , .		3
93	Control of Mechanical Systems with Cyclic Coordinates using Higher Order Averaging. , 0, , .		2
94	Preliminary Optimization Results for an Almost Globally Stable Control Law Using a Genetic Algorithm. , 2012, , .		2
95	Robust stochastic stabilization of attitude motion. International Journal of Dynamics and Control, 2019, 7, 619-635.	1.5	2
96	Special issue on â€œRecent Advances on Data Fusion, Estimation in Navigation and Controlâ€• Asian Journal of Control, 2019, 21, 1407-1408.	1.9	2
97	Discrete Time Optimal Trajectory Generation and Transversality Condition with Free Final Time. , 2021, , .		2
98	A Robust Estimator for Almost Global Attitude Feedback Tracking. , 2010, , .		2
99	Design and analysis of attitude observers based on the Lagrange-dâ€™Alembert principle applied to constrained three-vehicle formations. Advances in Space Research, 2022, 69, 4001-4012.	1.2	2
100	Propagation of uncertainty in rigid body attitude flows. , 2007, , .		1
101	Embedded optimal control problems. , 2011, , .		1
102	A Comparison Study of State Estimators for Dynamics on the Sphere. , 2012, , .		1
103	Design of an Adaptive Singularity-Free Control Moment Gyroscope (ASCMG) Cluster for Spacecraft Attitude Control. , 2015, , .		1
104	Controllability Analysis of Spacecraft with Only Attitude Actuation Near Small Solar System Bodies. IFAC-PapersOnLine, 2016, 49, 648-653.	0.5	1
105	Fractional Control of Rigid Body Attitude Dynamics Using Exponential Coordinates. , 2018, , .		1
106	Autonomous UAV with Learned Trajectory Generation and Control. , 2019, , .		1
107	A Finite-Time Stable Observer for Relative Attitude Estimation. , 2019, , .		1
108	Interactions Between Upstream Turbulent Flow and Quadrotor Thruster Dynamic Performance. , 2020, , .		1

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109	Attitude observers for three-vehicle heterogeneous formations based on the Lagrange-dâ€™Alembert principle. , 2021, , .		1
110	HarrisFest [Conference Reports]. IEEE Control Systems, 2010, 30, 81-83.	1.0	0
111	On the Performance of a Genetic Algorithm for Spacecraft Controller Gain Optimization. , 2013, , .		0
112	Discrete-Time Optimal Trajectory Generation Through Multiple Waypoints. , 2019, , .		0
113	Adaptation and Cooperation in Control of Multiple Robot Manipulators. Journal of the Astronautical Sciences, 2000, 48, 305-336.	0.8	0
114	Analytical and Numerical Solution of a Sub-Riemannian Optimal Control Problem with Applications to Quantum Spin Systems. Communications in Information and Systems, 2009, 9, 59-76.	0.3	0