Pedro Batista

List of Publications by Year in descending order

130 papers	1,494 citations	361413 20 h-index	395702 33 g-index
131 all docs	131 docs citations	131 times ranked	849 citing authors

#	Article	IF	Citations
1	Single range aided navigation and source localization: Observability and filter design. Systems and Control Letters, 2011, 60, 665-673.	2.3	129
2	Accelerometer Calibration and Dynamic Bias and Gravity Estimation: Analysis, Design, and Experimental Evaluation. IEEE Transactions on Control Systems Technology, 2011, 19, 1128-1137.	5.2	65
3	Discrete-Time Complementary Filters for Attitude and Position Estimation: Design, Analysis and Experimental Validation. IEEE Transactions on Control Systems Technology, 2011, 19, 181-198.	5.2	56
4	Sensor-Based Globally Asymptotically Stable Filters for Attitude Estimation: Analysis, Design, and Performance Evaluation. IEEE Transactions on Automatic Control, 2012, 57, 2095-2100.	5.7	55
5	A GES attitude observer with single vector observations. Automatica, 2012, 48, 388-395.	5.0	55
6	Position USBL/DVL sensor-based navigation filter in the presence of unknown ocean currents. Automatica, 2011, 47, 2604-2614.	5.0	53
7	Optimal position and velocity navigation filters for autonomous vehicles. Automatica, 2010, 46, 767-774.	5.0	49
8	Globally exponentially stable cascade observers for attitude estimation. Control Engineering Practice, 2012, 20, 148-155.	5.5	46
9	Discrete-time distributed Kalman filter design for formations of autonomous vehicles. Control Engineering Practice, 2018, 75, 55-68.	5.5	43
10	A Sensor-Based Controller for Homing of Underactuated AUVs. IEEE Transactions on Robotics, 2009, 25, 701-716.	10.3	42
11	On the observability of linear motion quantities in navigation systems. Systems and Control Letters, 2011, 60, 101-110.	2.3	42
12	Globally Asymptotically Stable Sensor-Based Simultaneous Localization and Mapping. IEEE Transactions on Robotics, 2013, 29, 1380-1395.	10.3	36
13	Distributed state estimation for linear multi-agent systems with time-varying measurement topology. Automatica, 2015, 54, 72-79.	5.0	35
14	Design and Experimental Validation of a USBL Underwater Acoustic Positioning System. Sensors, 2016, 16, 1491.	3.8	34
15	Decentralized observers for position and velocity estimation in vehicle formations with fixed topologies. Systems and Control Letters, 2012, 61, 443-453.	2.3	28
16	Sensorâ€Based Long Baseline Navigation: Observability Analysis and Filter Design. Asian Journal of Control, 2014, 16, 974-994.	3.0	28
17	Globally exponentially stable filters for source localization and navigation aided by direction measurements. Systems and Control Letters, 2013, 62, 1065-1072.	2.3	25
18	Low-cost Attitude and Heading Reference System: Filter design and experimental evaluation. , 2010, , .		24

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19	A twoâ€step control approach for docking of autonomous underwater vehicles. International Journal of Robust and Nonlinear Control, 2015, 25, 1528-1547.	3.7	24
20	GES Long Baseline Navigation With Unknown Sound Velocity and Discrete-Time Range Measurements. IEEE Transactions on Control Systems Technology, 2015, 23, 219-230.	5.2	22
21	Hovercraft Control With Dynamic Parameters Identification. IEEE Transactions on Control Systems Technology, 2018, 26, 785-796.	5.2	22
22	Sensor-based complementary globally asymptotically stable filters for attitude estimation. , 2009, , .		21
23	Long baseline navigation with clock offset estimation and discrete-time measurements. Control Engineering Practice, 2015, 35, 43-53.	5.5	21
24	Tightly coupled long baseline/ultra-short baseline integrated navigation system. International Journal of Systems Science, 2016, 47, 1837-1855.	5.5	21
25	A Sensor-based Long Baseline Position and Velocity Navigation Filter for Underwater Vehicles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 302-307.	0.4	19
26	GES integrated LBL/USBL navigation system for underwater vehicles. , 2012, , .		18
27	Simultaneous localization and mapping for aerial vehicles: a 3-D sensor-based GAS filter. Autonomous Robots, 2016, 40, 881-902.	4.8	17
28	Discrete time-varying attitude complementary filter. , 2009, , .		16
29	Single range navigation in the presence of constant unknown drifts. , 2009, , .		15
30	A time differences of arrivalâ€based homing strategy for autonomous underwater vehicles. International Journal of Robust and Nonlinear Control, 2010, 20, 1758-1773.	3.7	13
31	Attitude and earth velocity estimation - Part I: Globally exponentially stable observer. , 2014, , .		13
32	Uncertainty characterization of the orthogonal Procrustes problem with arbitrary covariance matrices. Pattern Recognition, 2017, 61, 210-220.	8.1	13
33	Position and velocity optimal sensor-based navigation filters for UAVs. , 2009, , .		12
34	3-D inertial trajectory and map online estimation: Building on a GAS sensor-based SLAM filter. , 2013, , .		12
35	Sensor-based globally exponentially stable range-only simultaneous localization and mapping. Robotics and Autonomous Systems, 2015, 68, 72-85.	5.1	12
36	A globally exponentially stable filter for bearing-only simultaneous localization and mapping with monocular vision. Robotics and Autonomous Systems, 2018, 100, 61-77.	5.1	12

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37	Decentralized store-and-forward based strategies for the signal control problem in large-scale congested urban road networks. Transportation Research Part C: Emerging Technologies, 2021, 132, 103412.	7.6	12
38	Preliminary results on globally asymptotically stable simultaneous localization and mapping in 3-D. , 2013, , .		11
39	Position and Velocity Filters for ASC/I-AUV Tandems Based on Single Range Measurements. Journal of Intelligent and Robotic Systems: Theory and Applications, 2014, 74, 745-768.	3.4	11
40	Partial attitude and rate gyro bias estimation: observability analysis, filter design, and performance evaluation. International Journal of Control, 2011, 84, 895-903.	1.9	10
41	Navigation systems based on multiple bearing measurements. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 2887-2899.	4.7	10
42	Decentralized state observers for rangeâ€based position and velocity estimation in acyclic formations with fixed topologies. International Journal of Robust and Nonlinear Control, 2016, 26, 963-994.	3.7	9
43	Nonlinear Observer on SO(3) for Attitude Estimation on Rotating Earth Using Single Vector Measurements. , 2019, 3, 392-397.		9
44	A Quaternion Sensor Based Controller for Homing of Underactuated AUVs. , 2006, , .		8
45	Position and Velocity Navigation Filters for Marine Vehicles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 15016-15021.	0.4	8
46	Sensor-based simultaneous localization and mapping — Part II: Online inertial map and trajectory estimation. , 2012, , .		8
47	A received signal strength indication-based localization system. , 2013, , .		8
48	Source Localization Based on Acoustic Single Direction Measurements. IEEE Transactions on Aerospace and Electronic Systems, 2018, 54, 2837-2852.	4.7	8
49	Necessary and sufficient conditions for the observability of linear motion quantities in strapdown navigation systems. , 2009, , .		7
50	GES Attitude Observers â€“ Part II: Single Vector Observations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 2991-2996.	0.4	7
51	Vector-Based Attitude Filter for Space Navigation. Journal of Intelligent and Robotic Systems: Theory and Applications, 2011, 64, 221-243.	3.4	7
52	Sensor-based simultaneous localization and mapping — Part I: GAS robocentric filter. , 2012, , .		7
53	Attitude and earth velocity estimation - Part II: Observer on the special orthogonal group. , 2014, , .		7
54	Globally exponentially stable attitude observer with Earth velocity estimation. Asian Journal of Control, 2019, 21, 1409-1422.	3.0	7

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55	Position USBL/DVL sensor-based navigation filter in the presence of unknown ocean currents. , 2010, , .		6
56	GES Attitude Observers â€“ Part I: Multiple General Vector Observations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 2985-2990.	0.4	6
57	Position and velocity filters for intervention AUVs based on single range and depth measurements. , 2012, , .		6
58	GES source localization and navigation based on discrete-time bearing measurements. , 2013, , .		6
59	Calibration of High-Grade Inertial Measurement Units Using a Rate Table. , 2019, 3, 1-4.		6
60	Efficient Algorithm for the Computation of the Solution to a Sparse Matrix Equation in Distributed Control Theory. Mathematics, 2021, 9, 1497.	2.2	6
61	Discrete-time distributed Kalman filter design for networks of interconnected systems with linear time-varying dynamics. International Journal of Systems Science, 2022, 53, 1334-1351.	5.5	6
62	GES source localization based on discrete-time position and single range measurements. , 2013, , .		5
63	GAS tightly coupled LBL/USBL position and velocity filter for underwater vehicles. , 2013, , .		5
64	Design and Validation of an RGB-D Based Localization System - Integration in a Docking System. Journal of Intelligent and Robotic Systems: Theory and Applications, 2015, 80, 423-440.	3.4	5
65	Discrete-time distributed Kalman filter design for multi-vehicle systems. , 2017, , .		5
66	A solution for the attitude determination of three-vehicle heterogeneous formations. Aerospace Science and Technology, 2019, 93, 105275.	4.8	5
67	Attitude estimation using high-grade gyroscopes. Control Engineering Practice, 2019, 92, 104134.	5.5	5
68	Attitude observer on the special orthogonal group with Earth velocity estimation. Systems and Control Letters, 2019, 126, 33-39.	2.3	5
69	Discreteâ€time decentralized linear quadratic control for linear timeâ€varying systems. International Journal of Robust and Nonlinear Control, 2023, 33, 67-101.	3.7	5
70	Kalman and Hâˆž Optimal Filtering for a Class of Kinematic Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 12528-12533.	0.4	4
71	Globally asymptotically stable filters for source localization and navigation aided by direction measurements. , 2011, , .		4
72	Attitude Estimation for Intervention-AUVs Working in Tandem with Autonomous Surface Craft. European Journal of Control, 2012, 18, 485-495.	2.6	4

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73	Nonlinear observability and observer design through state augmentation. , 2014, , .		4
74	Relaxed conditions for uniform complete observability and controllability of LTV systems with bounded realizations 1 1This work was supported by the FundaÃ§Ã£o para a CiÃªncia e a Tecnologia (FCT) through ISR under LARSyS UID/EEA/50009/2013, and through IDMEC, under LAETA UID/EMS/50022/2013 contracts, by the University of Macau Projects MYRG2015-00126-FST and MYRG2015-00127-FST, and by the Macao Science and Technology Development Fund under Grant FDCT/048/2014/A1.. IFAC-PapersOnLine, 2017, 50, 3598-3605.	0.9	4
75	Kalman Filter Cascade for Attitude Estimation on Rotating Earth. IEEE/ASME Transactions on Mechatronics, 2020, 25, 327-338.	5.8	4
76	Distributed controller design and performance optimization for discreteâ€time linear systems. Optimal Control Applications and Methods, 2021, 42, 126-143.	2.1	4
77	Attitude, body-fixed Earth rotation rate, and sensor bias estimation using single observations of direction of gravitational field. Automatica, 2021, 125, 109475.	5.0	4
78	Distributed Formation Control of Double-Integrator Vehicles with Disturbance Rejection. IFAC-PapersOnLine, 2020, 53, 3118-3123.	0.9	4
79	A Sensor Based Homing Strategy for Autonomous Underwater Vehicles. , 2006, , .		3
80	Position and Velocity Navigation Systems for Unmanned Vehicles. IEEE Transactions on Control Systems Technology, 2009, 17, 707-715.	5.2	3
81	GAS decentralized navigation filters in a continuous-discrete fixed topology framework. , 2013, , .		3
82	GES long baseline navigation with unknown sound velocity and discrete-time range measurements. , 2013, , .		3
83	Sensor-based globally asymptotically stable range-only simultaneous localization and mapping. , 2013, , .		3
84	Further results on the observability in magneto-inertial navigation. , 2013, , .		3
85	GES Long Baseline Navigation with clock offset estimation. , 2014, , .		3
86	Torwards uncertainty optimization in active SLAM. , 2015, , .		3
87	Nonlinear Attitude Observer on SO(3) Based on Single Body-Vector Measurements. , 2018, , .		3
88	Robustness to measurement noise of a globally convergent attitude observer with topological relaxations. Nonlinear Dynamics, 2019, 98, 589-600.	5.2	3
89	Preliminary Results on 2-D Simultaneous Localization and Mapping for Aerial Robots in Dynamics Environments. , 2019, , .		3
90	Strategies for uncertainty optimization through motion planning in GES sensor-based SLAM. Robotics and Autonomous Systems, 2019, 113, 38-55.	5.1	3

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91	Special Cases in the Attitude Determination of Three-Vehicle Heterogeneous Formations. , 2020, , .		3
92	Decentralized linear state observers for vehicle formations with time-varying topologies. , 2013, , .		2
93	A globally exponentially stable filter for bearing-only simultaneous localization and mapping in 3-D. , 2015, , .		2
94	On the stability of the continuous-time Kalman filter subject to exponentially decaying perturbations. Systems and Control Letters, 2016, 89, 41-46.	2.3	2
95	Long Baseline Aided Inertial Navigation System with Clock Offset Estimation. , 2019, , .		2
96	Special issue on â€œRecent Advances on Data Fusion, Estimation in Navigation and Controlâ€• Asian Journal of Control, 2019, 21, 1407-1408.	3.0	2
97	Long baseline navigation with explicit pseudo-range clock offset and propagation speed estimation. European Journal of Control, 2019, 49, 116-130.	2.6	2
98	Decentralized Navigation Systems for Bearing-based Position and Velocity Estimation in Tiered Formations. , 2020, , .		2
99	Long baseline navigation filter with clock offset estimation. Nonlinear Dynamics, 2020, 100, 2557-2573.	5.2	2
100	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.	2.6	2
101	Observer design for a class of kinematic systems. , 2007, , .		1
102	Low-Cost Sensor-Based Integrated Attitude Filter for Space Applications. , 2009, , .		1
103	Computationally efficient GES cascade observer for attitude estimation. , 2011, , .		1
104	GAS Ocean Current Estimation with Limited Velocity Readings. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 337-342.	0.4	1
105	Globally asymptotically stable filter for navigation aided by direction and depth measurements. , 2012, , .		1
106	Preliminary results on the estimation performance of single range source localization. , 2013, , .		1
107	Simultaneous Localization and mapping in sensor networks: A GES sensor-based filter with moving object tracking. , 2015, , .		1
108	Globally convergent relative attitude observers for three-platform formations. , 2015, , .		1

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109	Navigation and source localization based on single pseudo-ranges. , 2020, , .		1
110	Earth-fixed trajectory and map online estimation: Building on GES sensor-based SLAM filters. Robotics and Autonomous Systems, 2020, 130, 103552.	5.1	1
111	Characterization of Degenerate Configurations in Attitude Determination of Three-Vehicle Heterogeneous Formations. Sensors, 2021, 21, 4631.	3.8	1
112	Attitude observers aided by implicit measurements of the Earth angular velocity. , 2020, , .		1
113	Cooperative Navigation Based on Bearing and Range Measurements to Different Vehicles. IFAC-PapersOnLine, 2020, 53, 14552-14557.	0.9	1
114	Attitude observers for three-vehicle heterogeneous formations based on the Lagrange-dâ€™Alembert principle. , 2021, , .		1
115	Earth-based Simultaneous Localization and Mapping for Drones in Dynamic Environments. Journal of Intelligent and Robotic Systems: Theory and Applications, 2022, 104, 1.	3.4	1
116	Decentralized control and state estimation of linear timeâ€periodic systems. International Journal of Robust and Nonlinear Control, 0, , .	3.7	1
117	A study on cooperative navigation of AUVs based on bearing measurements. , 2021, , .		1
118	Optimal position and velocity navigation filters with discrete-time delayed measurements. , 2008, , .		0
119	GES tightly coupled attitude estimation based on a LBL/USBL positioning system. , 2013, , .		0
120	Filter design for localization aided by direction and Doppler measurements. , 2014, , .		0
121	Design and validation of a linear parameter varying localization system. , 2014, , .		0
122	Pseudo-range navigation with clock offset and propagation speed estimation. , 2015, , .		0
123	Relative attitude observers for three-platform formations with inertial spread observations. , 2016, , .		0
124	Relative and inertial attitude determination in three-vehicle long formations. , 2018, , .		0
125	A Globally Exponentially Stable Solution for Frequency Estimation. , 2018, , .		0
126	Decentralised navigation systems for bearing-based position and velocity estimation in tiered formations. International Journal of Systems Science, 2022, 53, 504-525.	5.5	0

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127	New Design Techniques for Globally Convergent Simultaneous Localization and Mapping: Analysis and Implementation. Lecture Notes in Control and Information Sciences, 2017, , 121-141.	1.0	0
128	Navigation and Source Localization based on Single Pseudo-Ranges with an Unknown Multiplicative Factor. IFAC-PapersOnLine, 2020, 53, 14662-14667.	0.9	0
129	Kalman filtering technique for attitude estimation on SO(3) using single inertial vector observations. , 2021, , .		0
130	Attitude Uncertainty Analysis of a Three-Vehicle Constrained Formation. Sensors, 2022, 22, 3879.	3.8	0