

Balakumar Balachandran

List of Publications by Year in descending order

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107
papers

4,636
citations

136950

32
h-index

155660

55
g-index

115
all docs

115
docs citations

115
times ranked

2257
citing authors

#	ARTICLE	IF	CITATIONS
1	Noise-assisted response steering for a rotor-stator system. Journal of Sound and Vibration, 2022, 523, 116683.	3.9	5
2	Dynamics of circular oscillator arrays subjected to noise. Nonlinear Dynamics, 2022, 108, 1-14.	5.2	17
3	Noise influenced response movement in coupled oscillator arrays with multi-stability. Journal of Sound and Vibration, 2022, 531, 116951.	3.9	8
4	Computationally Efficient Simulations of Stochastically Perturbed Nonlinear Dynamical Systems. Journal of Computational and Nonlinear Dynamics, 2022, , .	1.2	0
5	Three-dimensional formulation of a strain-based geometrically nonlinear piezoelectric beam for energy harvesting. Journal of Intelligent Material Systems and Structures, 2021, 32, 2153-2173.	2.5	2
6	Wave Propagation Studies in Numerical Wave Tanks with Weakly Compressible Smoothed Particle Hydrodynamics. Journal of Marine Science and Engineering, 2021, 9, 233.	2.6	3
7	Data driven forecasting of aperiodic motions of non-autonomous systems. Chaos, 2021, 31, 021105.	2.5	3
8	Discrete element method-based studies on dynamic interactions of a lugged wheel with granular media. Journal of Terramechanics, 2021, 94, 49-62.	3.1	6
9	Dynamic interactions of a driven pendulum with photoelastic granular media. Physics Letters, Section A: General, Atomic and Solid State Physics, 2021, 396, 127244.	2.1	0
10	Drillstring Oscillations: The Influence of Fluid Loading and Stabilizer Effects. Shock and Vibration, 2021, 2021, 1-10.	0.6	1
11	Transient probability in basins of noise influenced responses of mono and coupled Duffing oscillators. Chaos, 2021, 31, 063117.	2.5	8
12	Online Data-Driven Prediction of Spatio-Temporal System Behavior Using High-Fidelity Simulations and Sparse Sensor Measurements. Journal of Mechanical Design, Transactions of the ASME, 2021, 143, .	2.9	5
13	Continuum Modeling and Simulation of Robotic Appendage Interaction With Granular Material. Journal of Applied Mechanics, Transactions ASME, 2021, 88, .	2.2	3
14	Smooth particle hydrodynamics studies of wet granular column collapses. Acta Geotechnica, 2020, 15, 1205-1217.	5.7	19
15	Dynamics of one-dimensional granular arrays with pre-compression. Nonlinear Dynamics, 2020, 99, 707-720.	5.2	3
16	Spatial-temporal dynamics of a drill string with complex time-delay effects: Bit bounce and stick-slip oscillations. International Journal of Mechanical Sciences, 2020, 170, 105338.	6.7	53
17	COVID-19: data-driven dynamics, statistical and distributed delay models, and observations. Nonlinear Dynamics, 2020, 101, 1527-1543.	5.2	35
18	Noise-induced chaotic-attractor escape route. Nonlinear Dynamics, 2020, 102, 863-876.	5.2	11

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19	Comparative study on analytical and computational aerodynamic models for flapping wings MAVs. <i>Aeronautical Journal</i> , 2020, 124, 1636-1665.	1.6	1
20	Nonlinear instabilities and control of drill-string stick-slip vibrations with consideration of state-dependent delay. <i>Journal of Sound and Vibration</i> , 2020, 473, 115235.	3.9	35
21	Influence of dissipation on extreme oscillations of a forced anharmonic oscillator. <i>International Journal of Non-Linear Mechanics</i> , 2020, 127, 103596.	2.6	11
22	Neural machine-based forecasting of chaotic dynamics. <i>Nonlinear Dynamics</i> , 2019, 98, 2903-2917.	5.2	29
23	A new solution to enhance cuttings transport in mining drilling by using pulse jet mill technique. <i>Science China Technological Sciences</i> , 2019, 62, 875-884.	4.0	12
24	Extreme wave formation in unidirectional sea due to stochastic wave phase dynamics. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2018, 382, 1864-1872.	2.1	10
25	Influence of noise on frequency responses of softening Duffing oscillators. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2018, 382, 3355-3364.	2.1	23
26	Motion visualization and estimation for flapping wing systems. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2017, 33, 327-340.	3.4	8
27	Safe regions with partial control of a chaotic system in the presence of white Gaussian noise. <i>International Journal of Non-Linear Mechanics</i> , 2017, 94, 3-11.	2.6	7
28	Nonlinear dynamics of a Jeffcott rotor with torsional deformations and rotor-stator contact. <i>International Journal of Non-Linear Mechanics</i> , 2017, 92, 102-110.	2.6	60
29	State-Dependent Delay and Drill-String Dynamics. <i>Procedia IUTAM</i> , 2017, 22, 31-38.	1.2	7
30	Effects of high frequency drive speed modulation on rotor with continuous stator contact. <i>International Journal of Mechanical Sciences</i> , 2017, 131-132, 559-571.	6.7	20
31	Computational Studies on Interactions between Robot Leg and Deformable Terrain. <i>Procedia Engineering</i> , 2017, 199, 2439-2444.	1.2	4
32	Effects of noise on symmetric intrinsic localized modes. <i>Nonlinear Dynamics</i> , 2016, 85, 333-341.	5.2	25
33	Laboratory Scale Arrangement for Experimental Studies of Drill-String Motions. , 2016, , .		0
34	Response localization in micro-scale oscillator arrays: influence of cubic coupling nonlinearities. <i>International Journal of Dynamics and Control</i> , 2015, 3, 183-188.	2.5	22
35	Algorithm Fusion for Feature Extraction and Map Construction From SONAR Data. <i>IEEE Sensors Journal</i> , 2015, 15, 6460-6471.	4.7	12
36	Effects of phase lag on the information rate of a bistable Duffing oscillator. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2015, 379, 308-313.	2.1	13

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37	State-Dependent Delay Influenced Drill-String Oscillations and Stability Analysis. Journal of Vibration and Acoustics, Transactions of the ASME, 2014, 136, .	1.6	65
38	Wave Propagation Through Soft Tissue: Effect of Material Nonlinearity and Nonuniform Cross-Section. , 2014, , .		0
39	Draft: Stick-Slip Motions of a Rotor-Stator System. Journal of Vibration and Acoustics, Transactions of the ASME, 2014, 136, .	1.6	17
40	Multiple regenerative effects in cutting process and nonlinear oscillations. International Journal of Dynamics and Control, 2014, 2, 86-101.	2.5	35
41	Rogue waves: New forms enabled by GPU computing. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 2377-2381.	2.1	10
42	Implementation and Benchmarking of Two-Dimensional Vortex Interactions on a Graphics Processing Unit. Journal of Aerospace Information Systems, 2014, 11, 372-385.	1.4	4
43	Coupled axial-torsional dynamics in rotary drilling with state-dependent delay: stability and control. Nonlinear Dynamics, 2014, 78, 1891-1906.	5.2	78
44	Torsional oscillations of a rotor with continuous stator contact. International Journal of Mechanical Sciences, 2014, 83, 65-75.	6.7	51
45	Geometrically exact planar beams with initial pre-stress and large curvature: Static configurations, natural frequencies, and mode shapes. International Journal of Solids and Structures, 2014, 51, 3361-3371.	2.7	27
46	Nonlinear Rotor Response with Coupled Lateral and Torsional Motions. IEICE Proceeding Series, 2014, 2, 22-25.	0.0	0
47	Nonlinear motions of a flexible rotor with a drill bit: stick-slip and delay effects. Nonlinear Dynamics, 2013, 72, 61-77.	5.2	119
48	Longitudinal nonlinear wave propagation through soft tissue. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 20, 192-208.	3.1	18
49	Noise-Influenced Dynamics of a Vertically Excited Pendulum. , 2013, , .		0
50	Noise-influenced transient energy localization in an oscillator array. Nonlinear Theory and Its Applications IEICE, 2013, 4, 232-243.	0.6	7
51	State-Dependent Delay Influenced Drill String Dynamics and Stability Analysis. , 2013, , .		3
52	Stability Analysis and Control of Supercavitating Vehicles With Advection Delay. Journal of Computational and Nonlinear Dynamics, 2013, 8, .	1.2	26
53	Near-Grazing Dynamics of Macro-scale and Micro-scale Cantilevers with Nonlinear Tip Interaction Forces. , 2013, , 281-293.		1
54	Near-grazing dynamics of base excited cantilevers with nonlinear tip interactions. Nonlinear Dynamics, 2012, 70, 1297-1310.	5.2	30

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55	Noise-enhanced Response of Nonlinear Oscillators. <i>Procedia IUTAM</i> , 2012, 5, 59-68.	1.2	18
56	Parametric studies on drill-string motions. <i>International Journal of Mechanical Sciences</i> , 2012, 54, 260-268.	6.7	53
57	Drill-String Dynamics: Reduced-Order Models and Experimental Studies. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2011, 133, .	1.6	79
58	Flexible flapping systems: computational investigations into fluid-structure interactions. <i>Aeronautical Journal</i> , 2011, 115, 593-604.	1.6	30
59	Noise influenced elastic cantilever dynamics with nonlinear tip interaction forces. <i>Nonlinear Dynamics</i> , 2011, 66, 427-439.	5.2	16
60	OFF-RESONANCE CANTILEVER DYNAMICS IN THE PRESENCE OF ATTRACTIVE AND REPULSIVE TIP INTERACTION FORCES. <i>International Journal of Structural Stability and Dynamics</i> , 2011, 11, 603-620.	2.4	7
61	Supercavitating Vehicles With Noncylindrical, Nonsymmetric Cavities: Dynamics and Instabilities. <i>Journal of Computational and Nonlinear Dynamics</i> , 2011, 6, .	1.2	27
62	Influence of Noise on Discrete Breathers in Nonlinearly Coupled Micro-oscillator Arrays. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2011, , 247-254.	0.2	2
63	Energy localization and white noise-induced enhancement of response in a micro-scale oscillator array. <i>Nonlinear Dynamics</i> , 2010, 62, 1-16.	5.2	33
64	Localization in Microresonator Arrays: Influence of Natural Frequency Tuning. <i>Journal of Computational and Nonlinear Dynamics</i> , 2010, 5, .	1.2	27
65	Absolute Stability of Second-Order Systems With Asymmetric Sector Boundaries. <i>IEEE Transactions on Automatic Control</i> , 2010, 55, 458-463.	5.7	11
66	Intrinsic Localized Modes in Micro-scale Oscillator Arrays Subjected to Deterministic Excitation and White Noise. , 2010, , 325-334.		4
67	Lateral Load Transfer Effects on Bifurcation Behavior of Four-Wheel Vehicle System. <i>Journal of Computational and Nonlinear Dynamics</i> , 2009, 4, .	1.2	13
68	Influence of flexibility on the aerodynamic performance of a hovering wing. <i>Journal of Experimental Biology</i> , 2009, 212, 95-105.	1.7	224
69	Utilizing nonlinear phenomena to locate grazing in the constrained motion of a cantilever beam. <i>Nonlinear Dynamics</i> , 2009, 57, 335-349.	5.2	43
70	Systems with Periodic Coefficients and Periodically Varying Delays: Semidiscretization-Based Stability Analysis. , 2009, , 131-153.		19
71	Intrinsic localized modes in microresonator arrays and their relationship to nonlinear vibration modes. <i>Nonlinear Dynamics</i> , 2008, 54, 13-29.	5.2	66
72	Grazing bifurcations in an elastic structure excited by harmonic impactor motions. <i>Physica D: Nonlinear Phenomena</i> , 2008, 237, 1129-1138.	2.8	56

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73	Nonlinear oscillations of piezoelectric microresonators with curved cross-sections. Sensors and Actuators A: Physical, 2008, 144, 194-200.	4.1	24
74	Dynamics and Control of Supercavitating Vehicles. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2008, 130, .	1.6	36
75	A Review of Nonlinear Dynamics of Mechanical Systems in Year 2008. Journal of System Design and Dynamics, 2008, 2, 611-640.	0.3	40
76	Control of an Impacted Cantilever toward Application of an Atomic Force Microscope in Tapping Mode. Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, 2008, 74, 1409-1415.	0.2	0
77	Stability analysis for milling process. Nonlinear Dynamics, 2007, 49, 349-359.	5.2	74
78	Nonlinear free and forced oscillations of piezoelectric microresonators. Journal of Micromechanics and Microengineering, 2006, 16, 356-367.	2.6	82
79	Buckling and Free Oscillations of Composite Microresonators. Journal of Microelectromechanical Systems, 2006, 15, 42-51.	2.5	50
80	Dynamics of milling processes with variable time delays. Nonlinear Dynamics, 2006, 47, 49-63.	5.2	58
81	A semi-analytical tool based on geometric nonlinearities for microresonator design. Journal of Micromechanics and Microengineering, 2006, 16, 512-525.	2.6	20
82	Parametric identification of piezoelectric microscale resonators. Journal of Micromechanics and Microengineering, 2006, 16, 1593-1601.	2.6	53
83	Sensor diaphragm under initial tension: Linear analysis. Experimental Mechanics, 2005, 45, 123-129.	2.0	51
84	Intrinsic Localized Modes and Nonlinear Normal Modes in Micro-Resonator Arrays. , 2005, , 165.		4
85	Non-linear oscillations of milling. Mathematical and Computer Modelling of Dynamical Systems, 2005, 11, 273-290.	2.2	26
86	Nonlinear Phenomena in Microelectromechanical Resonators. , 2005, , 97-106.		7
87	Sensor Diaphragm Under Initial Tension: Linear Analysis. Experimental Mechanics, 2005, 45, 123-129.	2.0	2
88	Milling Model With Variable Time Delay. , 2004, , 933.		10
89	Dynamics of an Elastic Structure Excited by Harmonic and Aharmonic Impactor Motions. JVC/Journal of Vibration and Control, 2003, 9, 265-279.	2.6	71
90	Stability of Precision Diamond Turning Processes That Use Round Nosed Tools*. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2001, 123, 747-748.	2.2	7

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91	Nonlinear dynamics of milling processes. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2001, 359, 793-819.	3.4	164
92	Dynamics and stability of milling process. International Journal of Solids and Structures, 2001, 38, 2233-2248.	2.7	123
93	Active feedback control of multiple waves in helicopter gearbox support struts. Smart Materials and Structures, 2001, 10, 1046-1058.	3.5	27
94	Analytical study of active control of wave transmission through cylindrical struts. Smart Materials and Structures, 2001, 10, 121-136.	3.5	17
95	A Mechanics Based Model for Study of Dynamics of Milling Operations. Meccanica, 2000, 35, 89-109.	2.0	84
96	Impact Dynamics in Milling of Thin-Walled Structures. Nonlinear Dynamics, 2000, 22, 375-392.	5.2	97
97	Active control of multiple tones in an enclosure. Journal of the Acoustical Society of America, 1999, 106, 211-225.	1.1	20
98	Experimental Verification of the Importance of The Nonlinear Curvature in the Response of a Cantilever Beam. Journal of Vibration and Acoustics, Transactions of the ASME, 1996, 118, 21-27.	1.6	128
99	Coupling between high-frequency modes and a low-frequency mode: Theory and experiment. Nonlinear Dynamics, 1996, 11, 17-36.	5.2	47
100	Nonlinear Resonances in a Flexible Cantilever Beam. Journal of Vibration and Acoustics, Transactions of the ASME, 1994, 116, 480-484.	1.6	42
101	COUPLING BETWEEN HIGH-FREQUENCY MODES AND A LOW-FREQUENCY MODE: THEORY AND EXPERIMENT. , 1993, , .		1
102	Cyclic motions near a Hopf bifurcation of a four-dimensional system. Nonlinear Dynamics, 1992, 3, 19-39.	5.2	30
103	An Experimental Investigation of Complicated Responses of a Two-Degree-of-Freedom Structure. Journal of Applied Mechanics, Transactions ASME, 1989, 56, 960-967.	2.2	54
104	Modal Interactions in Dynamical and Structural Systems. Applied Mechanics Reviews, 1989, 42, S175-S201.	10.1	242
105	Active control of noise in a three-dimensional enclosure using indirect adaptive control. , 0, , .		1
106	Supercavitating body dynamics, bifurcations and control. , 0, , .		7
107	GPU Based Simulation of Physical Systems Characterized by Mobile Discrete Interactions. Computational Science, Engineering and Technology Series, 0, , 95-124.	0.2	6