

Balakumar Balachandran

List of Publications by Citations

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103
papers

3,539
citations

29
h-index

58
g-index

115
ext. papers

4,035
ext. citations

3.1
avg, IF

5.6
L-index

#	Paper	IF	Citations
103	1995,		881
102	Modal Interactions in Dynamical and Structural Systems. <i>Applied Mechanics Reviews</i> , 1989 , 42, S175-S2018.6		197
101	Influence of flexibility on the aerodynamic performance of a hovering wing. <i>Journal of Experimental Biology</i> , 2009 , 212, 95-105	3	184
100	Nonlinear dynamics of milling processes. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2001 , 359, 793-819	3	138
99	Experimental Verification of the Importance of The Nonlinear Curvature in the Response of a Cantilever Beam. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 1996 , 118, 21-27	1.6	113
98	Dynamics and stability of milling process. <i>International Journal of Solids and Structures</i> , 2001 , 38, 2233-2248	3.48	103
97	Nonlinear motions of a flexible rotor with a drill bit: stick-slip and delay effects. <i>Nonlinear Dynamics</i> , 2013 , 72, 61-77	5	88
96	Impact Dynamics in Milling of Thin-Walled Structures. <i>Nonlinear Dynamics</i> , 2000 , 22, 375-392	5	84
95	Nonlinear free and forced oscillations of piezoelectric microresonators. <i>Journal of Micromechanics and Microengineering</i> , 2006 , 16, 356-367	2	75
94	Stability analysis for milling process. <i>Nonlinear Dynamics</i> , 2007 , 49, 349-359	5	69
93	A Mechanics Based Model for Study of Dynamics of Milling Operations. <i>Meccanica</i> , 2000 , 35, 89-109	2.1	67
92	Coupled axial-torsional dynamics in rotary drilling with state-dependent delay: stability and control. <i>Nonlinear Dynamics</i> , 2014 , 78, 1891-1906	5	59
91	Dynamics of an Elastic Structure Excited by Harmonic and Aharmonic Impactor Motions. <i>JVC/Journal of Vibration and Control</i> , 2003 , 9, 265-279	2	59
90	Drill-String Dynamics: Reduced-Order Models and Experimental Studies. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2011 , 133,	1.6	54
89	Intrinsic localized modes in microresonator arrays and their relationship to nonlinear vibration modes. <i>Nonlinear Dynamics</i> , 2008 , 54, 13-29	5	52
88	Dynamics of milling processes with variable time delays. <i>Nonlinear Dynamics</i> , 2006 , 47, 49-63	5	47
87	State-Dependent Delay Influenced Drill-String Oscillations and Stability Analysis. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2014 , 136,	1.6	46

86	Grazing bifurcations in an elastic structure excited by harmonic impactor motions. <i>Physica D: Nonlinear Phenomena</i> , 2008 , 237, 1129-1138	3.3	46
85	Buckling and free oscillations of composite microresonators. <i>Journal of Microelectromechanical Systems</i> , 2006 , 15, 42-51	2.5	46
84	Parametric identification of piezoelectric microscale resonators. <i>Journal of Micromechanics and Microengineering</i> , 2006 , 16, 1593-1601	2	45
83	An Experimental Investigation of Complicated Responses of a Two-Degree-of-Freedom Structure. <i>Journal of Applied Mechanics, Transactions ASME</i> , 1989 , 56, 960-967	2.7	43
82	Torsional oscillations of a rotor with continuous stator contact. <i>International Journal of Mechanical Sciences</i> , 2014 , 83, 65-75	5.5	41
81	Sensor diaphragm under initial tension: Linear analysis. <i>Experimental Mechanics</i> , 2005 , 45, 123-129	2.6	40
80	Coupling between high-frequency modes and a low-frequency mode: Theory and experiment. <i>Nonlinear Dynamics</i> , 1996 , 11, 17-36	5	40
79	A Review of Nonlinear Dynamics of Mechanical Systems in Year 2008. <i>Journal of System Design and Dynamics</i> , 2008 , 2, 611-640		37
78	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	2.8	36
77	Parametric studies on drill-string motions. <i>International Journal of Mechanical Sciences</i> , 2012 , 54, 260-268	3.5	35
76	Nonlinear Resonances in a Flexible Cantilever Beam. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 1994 , 116, 480-484	1.6	35
75	Energy localization and white noise-induced enhancement of response in a micro-scale oscillator array. <i>Nonlinear Dynamics</i> , 2010 , 62, 1-16	5	30
74	Cyclic motions near a Hopf bifurcation of a four-dimensional system. <i>Nonlinear Dynamics</i> , 1992 , 3, 19-39	5	29
73	Utilizing nonlinear phenomena to locate grazing in the constrained motion of a cantilever beam. <i>Nonlinear Dynamics</i> , 2009 , 57, 335-349	5	27
72	Near-grazing dynamics of base excited cantilevers with nonlinear tip interactions. <i>Nonlinear Dynamics</i> , 2012 , 70, 1297-1310	5	25
71	Non-linear oscillations of milling. <i>Mathematical and Computer Modelling of Dynamical Systems</i> , 2005 , 11, 273-290	1	25
70	Spatial-temporal dynamics of a drill string with complex time-delay effects: Bit bounce and stick-slip oscillations. <i>International Journal of Mechanical Sciences</i> , 2020 , 170, 105338	5.5	25
69	Flexible flapping systems: computational investigations into fluid-structure interactions. <i>Aeronautical Journal</i> , 2011 , 115, 593-604	0.9	24

68	Dynamics and Control of Supercavitating Vehicles. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2008 , 130,	1.6	24
67	Localization in Microresonator Arrays: Influence of Natural Frequency Tuning. <i>Journal of Computational and Nonlinear Dynamics</i> , 2010 , 5,	1.4	23
66	COVID-19: data-driven dynamics, statistical and distributed delay models, and observations. <i>Nonlinear Dynamics</i> , 2020 , 101, 1-17	5	23
65	Stability Analysis and Control of Supercavitating Vehicles With Advection Delay. <i>Journal of Computational and Nonlinear Dynamics</i> , 2013 , 8,	1.4	22
64	Multiple regenerative effects in cutting process and nonlinear oscillations. <i>International Journal of Dynamics and Control</i> , 2014 , 2, 86-101	1.7	21
63	Nonlinear oscillations of piezoelectric microresonators with curved cross-sections. <i>Sensors and Actuators A: Physical</i> , 2008 , 144, 194-200	3.9	21
62	Active feedback control of multiple waves in helicopter gearbox support struts. <i>Smart Materials and Structures</i> , 2001 , 10, 1046-1058	3.4	21
61	Geometrically exact planar beams with initial pre-stress and large curvature: Static configurations, natural frequencies, and mode shapes. <i>International Journal of Solids and Structures</i> , 2014 , 51, 3361-3371 ^{3,1}		20
60	Supercavitating Vehicles With Noncylindrical, Nonsymmetric Cavities: Dynamics and Instabilities. <i>Journal of Computational and Nonlinear Dynamics</i> , 2011 , 6,	1.4	20
59	A semi-analytical tool based on geometric nonlinearities for microresonator design. <i>Journal of Micromechanics and Microengineering</i> , 2006 , 16, 512-525	2	20
58	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	5.5	18
57	Systems with Periodic Coefficients and Periodically Varying Delays: Semidiscretization-Based Stability Analysis 2009 , 131-153		17
56	Effects of noise on symmetric intrinsic localized modes. <i>Nonlinear Dynamics</i> , 2016 , 85, 333-341	5	17
55	Neural machine-based forecasting of chaotic dynamics. <i>Nonlinear Dynamics</i> , 2019 , 98, 2903-2917	5	16
54	Forced Harmonic Vibration of a Duffing Oscillator with Linear Viscous Damping 2011 , 139-174		16
53	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	2.3	16
52	Response localization in micro-scale oscillator arrays: influence of cubic coupling nonlinearities. <i>International Journal of Dynamics and Control</i> , 2015 , 3, 183-188	1.7	15
51	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	15

50	Noise-enhanced Response of Nonlinear Oscillators. <i>Procedia IUTAM</i> , 2012 , 5, 59-68		15
49	Longitudinal nonlinear wave propagation through soft tissue. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2013 , 20, 192-208	4-1	14
48	Analytical study of active control of wave transmission through cylindrical struts. <i>Smart Materials and Structures</i> , 2001 , 10, 121-136	3-4	14
47	Active control of multiple tones in an enclosure. <i>Journal of the Acoustical Society of America</i> , 1999 , 106, 211-225	2-2	14
46	Draft: Stick-Slip Motions of a Rotor-Stator System. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2014 , 136,	1-6	13
45	Noise influenced elastic cantilever dynamics with nonlinear tip interaction forces. <i>Nonlinear Dynamics</i> , 2011 , 66, 427-439	5	13
44	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	2-3	11
43	Algorithm Fusion for Feature Extraction and Map Construction From SONAR Data. <i>IEEE Sensors Journal</i> , 2015 , 15, 6460-6471	4	10
42	Lateral Load Transfer Effects on Bifurcation Behavior of Four-Wheel Vehicle System. <i>Journal of Computational and Nonlinear Dynamics</i> , 2009 , 4,	1-4	10
41	Smooth particle hydrodynamics studies of wet granular column collapses. <i>Acta Geotechnica</i> , 2020 , 15, 1205-1217	4-9	10
40	Motion visualization and estimation for flapping wing systems. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2017 , 33, 327-340	2	7
39	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	2-3	7
38	Rogue waves: New forms enabled by GPU computing. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2014 , 378, 2377-2381	2-3	7
37	Absolute Stability of Second-Order Systems With Asymmetric Sector Boundaries. <i>IEEE Transactions on Automatic Control</i> , 2010 , 55, 458-463	5-9	7
36	Milling Model With Variable Time Delay 2004 , 933		7
35	Stability of Precision Diamond Turning Processes That Use Round Nosed Tools*. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2001 , 123, 747-748	3-3	7
34	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	2-8	6
33	GPU Based Simulation of Physical Systems Characterized by Mobile Discrete Interactions. <i>Computational Science, Engineering and Technology Series</i> , 95-124		6

32	Influence of dissipation on extreme oscillations of a forced anharmonic oscillator. <i>International Journal of Non-Linear Mechanics</i> , 2020 , 127, 103596	2.8	6
31	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	3.5	6
30	Noise-influenced transient energy localization in an oscillator array. <i>Nonlinear Theory and Its Applications IEICE</i> , 2013 , 4, 232-243	0.6	5
29	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	1.9	5
28	Implementation and Benchmarking of Two-Dimensional Vortex Interactions on a Graphics Processing Unit. <i>Journal of Aerospace Information Systems</i> , 2014 , 11, 372-385	1	4
27	State-Dependent Delay and Drill-String Dynamics. <i>Procedia IUTAM</i> , 2017 , 22, 31-38		4
26	Computational Studies on Interactions between Robot Leg and Deformable Terrain. <i>Procedia Engineering</i> , 2017 , 199, 2439-2444		4
25	Noise-induced chaotic-attractor escape route. <i>Nonlinear Dynamics</i> , 2020 , 102, 863-876	5	4
24	Nonlinear Phenomena in Microelectromechanical Resonators 2005 , 97-106		3
23	Intrinsic Localized Modes in Micro-scale Oscillator Arrays Subjected to Deterministic Excitation and White Noise 2010 , 325-334		3
22	State-Dependent Delay Influenced Drill String Dynamics and Stability Analysis 2013 ,		2
21	Investigations into Wave Propagation in Soft Tissue. <i>IFMBE Proceedings</i> , 2010 , 13-17	0.2	2
20	Intrinsic Localized Modes and Nonlinear Normal Modes in Micro-Resonator Arrays 2005 , 165		2
19	Supercavitating body dynamics, bifurcations and control		2
18	Sensor diaphragm under initial tension: Linear analysis 2005 , 45, 123		2
17	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	0.3	2
16	Transient probability in basins of noise influenced responses of mono and coupled Duffing oscillators. <i>Chaos</i> , 2021 , 31, 063117	3.3	2
15	Three-dimensional formulation of a strain-based geometrically nonlinear piezoelectric beam for energy harvesting. <i>Journal of Intelligent Material Systems and Structures</i> , 1045389X2098879	2.3	2

14	Comparative study on analytical and computational aerodynamic models for flapping wings MAVs. <i>Aeronautical Journal</i> , 2020 , 124, 1636-1665	0.9	1
13	Online Data-Driven Prediction of Spatio-Temporal System Behavior Using High-Fidelity Simulations and Sparse Sensor Measurements. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021 , 143,	3	1
12	Near-Grazing Dynamics of Macro-scale and Micro-scale Cantilevers with Nonlinear Tip Interaction Forces 2013 , 281-293		1
11	Dynamics of one-dimensional granular arrays with pre-compression. <i>Nonlinear Dynamics</i> , 2020 , 99, 707-720		1
10	Discrete element method-based studies on dynamic interactions of a lugged wheel with granular media. <i>Journal of Terramechanics</i> , 2021 , 94, 49-62	2.2	1
9	Dynamics of circular oscillator arrays subjected to noise. <i>Nonlinear Dynamics</i> , 2022 , 108, 1	5	0
8	Noise-assisted response steering for a rotor-stator system. <i>Journal of Sound and Vibration</i> , 2022 , 523, 116683	3.9	0
7	Drillstring Oscillations: The Influence of Fluid Loading and Stabilizer Effects. <i>Shock and Vibration</i> , 2021 , 2021, 1-10	1.1	0
6	Wave Propagation Studies in Numerical Wave Tanks with Weakly Compressible Smoothed Particle Hydrodynamics. <i>Journal of Marine Science and Engineering</i> , 2021 , 9, 233	2.4	0
5	Data driven forecasting of aperiodic motions of non-autonomous systems. <i>Chaos</i> , 2021 , 31, 021105	3.3	0
4	Noise influenced response movement in coupled oscillator arrays with multi-stability. <i>Journal of Sound and Vibration</i> , 2022 , 531, 116951	3.9	0
3	Control of an Impacted Cantilever toward Application of an Atomic Force Microscope in Tapping Mode. <i>Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C</i> , 2008 , 74, 1409-1415		
2	Nonlinear Rotor Response with Coupled Lateral and Torsional Motions. <i>IEICE Proceeding Series</i> , 2014 , 2, 22-25		
1	Dynamic interactions of a driven pendulum with photoelastic granular media. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2021 , 396, 127244	2.3	