Maksym Spiryagin

List of Publications by Year
in descending order

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139	2,530	218677	276875
papers	citations	26 h-index	41 g-index

146	146	146	1086
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Longitudinal train dynamics: an overview. Vehicle System Dynamics, 2016, 54, 1688-1714.	3.7	134
2	An overview: modern techniques for railway vehicle on-board health monitoring systems. Vehicle System Dynamics, 2017, 55, 1045-1070.	3.7	123
3	Onboard Condition Monitoring Sensors, Systems and Techniques for Freight Railway Vehicles: A Review. IEEE Sensors Journal, 2019, 19, 4-24.	4.7	114
4	Creep force modelling for rail traction vehicles based on the Fastsim algorithm. Vehicle System Dynamics, 2013, 51, 1765-1783.	3.7	93
5	Modelling, simulation and applications of longitudinal train dynamics. Vehicle System Dynamics, 2017, 55, 1498-1571.	3.7	85
6	Design and Simulation of Rail Vehicles. , 0, , .		84
7	A review of dynamics modelling of friction draft gear. Vehicle System Dynamics, 2014, 52, 733-758.	3.7	76
8	Control system for maximum use of adhesive forces of a railway vehicle in a tractive mode. Mechanical Systems and Signal Processing, 2008, 22, 709-720.	8.0	55
9	Wagon instability in long trains. Vehicle System Dynamics, 2012, 50, 303-317.	3.7	54
10	Rail Flaw Detection Technologies for Safer, Reliable Transportation: A Review. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2018, 140, .	1.6	52
11	Freight train air brake models. International Journal of Rail Transportation, 2023, 11, 1-49.	2.7	52
12	Application of flywheel energy storage for heavy haul locomotives. Applied Energy, 2015, 157, 607-618.	10.1	51
13	International benchmarking of longitudinal train dynamics simulators: results. Vehicle System Dynamics, 2018, 56, 343-365.	3.7	50
14	Advanced dynamic modelling for friction draft gears. Vehicle System Dynamics, 2015, 53, 475-492.	3.7	49
15	Fatigue life assessment methods for railway vehicle bogie frames. Engineering Failure Analysis, 2020, 116, 104725.	4.0	42
16	Rail foot flaw detection based on a laser induced ultrasonic guided wave method. Measurement: Journal of the International Measurement Confederation, 2019, 148, 106922.	5.0	40
17	Simplified and advanced modelling of traction control systems of heavy-haul locomotives. Vehicle System Dynamics, 2015, 53, 672-691.	3.7	38
18	Rail rolling contact fatigue formation and evolution with surface defects. International Journal of Fatigue, 2022, 158, 106762.	5.7	37

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19	Study on wear and rolling contact fatigue behaviours of defective rail under different slip ratio and contact stress conditions. Tribology International, 2022, 169, 107491.	5.9	37
20	Adhesion estimation and its implementation for traction control of locomotives. International Journal of Rail Transportation, 2014, 2, 187-204.	2.7	36
21	A review of hydrogen technologies and engineering solutions for railway vehicle design and operations. Railway Engineering Science, 2021, 29, 212-232.	4.4	36
22	Parallel computing in railway research. International Journal of Rail Transportation, 2020, 8, 111-134.	2.7	35
23	A review of dynamics modelling of friction wedge suspensions. Vehicle System Dynamics, 2014, 52, 1389-1415.	3.7	34
24	International benchmarking of longitudinal train dynamics simulators: benchmarking questions. Vehicle System Dynamics, 2017, 55, 450-463.	3.7	32
25	Co-simulation of a mechatronic system using Gensys and Simulink. Vehicle System Dynamics, 2012, 50, 495-507.	3.7	31
26	A co-simulation approach for heavy haul long distance locomotive-track simulation studies. Vehicle System Dynamics, 2019, 57, 1363-1380.	3.7	30
27	Design and Simulation of Heavy Haul Locomotives and Trains. , 0, , .		30
28	Study on track dynamic forces due to rail short-wavelength dip defects using rail vehicle-track dynamics simulations. Journal of Mechanical Science and Technology, 2013, 27, 629-640.	1.5	29
29	Dynamic response feature of electromechanical coupled drive subsystem in a locomotive excited by wheel flat. Engineering Failure Analysis, 2021, 122, 105248.	4.0	28
30	Control and decision strategy for a class of Markovian jump systems in failure prone manufacturing process. IET Control Theory and Applications, 2012, 6, 1803-1811.	2.1	27
31	Modeling of Adhesion for Railway Vehicles. Journal of Adhesion Science and Technology, 2008, 22, 1017-1034.	2.6	26
32	Dynamic performance of locomotive electric drive system under excitation from gear transmission and wheel-rail interaction. Vehicle System Dynamics, 2022, 60, 1806-1828.	3.7	26
33	Friction condition characterization for rail vehicle advanced braking system. Mechanical Systems and Signal Processing, 2019, 134, 106324.	8.0	25
34	Investigation of locomotive multibody modelling issues and results assessment based on the locomotive model acceptance procedure. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2013, 227, 453-468.	2.0	24
35	Development of a real-time bogie test rig model based on railway specialised multibody software. Vehicle System Dynamics, 2013, 51, 236-250.	3.7	23
36	Parallel Co-Simulation Method for Railway Vehicle-Track Dynamics. Journal of Computational and Nonlinear Dynamics, 2018, 13, .	1.2	22

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37	Review of adhesion estimation approaches for rail vehicles. International Journal of Rail Transportation, 2019, 7, 79-102.	2.7	22
38	Prediction of rail surface damage in locomotive traction operations using laboratory-field measured and calibrated data. Engineering Failure Analysis, 2022, 135, 106165.	4.0	22
39	Numerical calculation of temperature in the wheelâ€“rail flange contact and implications for lubricant choice. Wear, 2010, 268, 287-293.	3.1	21
40	Development of Traction Control for Hauling Locomotives. Journal of System Design and Dynamics, 2011, 5, 1214-1225.	0.3	21
41	Problems, assumptions and solutions in locomotive design, traction and operational studies. Railway Engineering Science, 2022, 30, 265-288.	4.4	21
42	Parallel Computing Scheme for Three-Dimensional Long Train System Dynamics. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	20
43	Comparison of locomotive energy storage systems for heavy-haul operation. International Journal of Rail Transportation, 2018, 6, 1-15.	2.7	20
44	Monitoring vertical wheelâ€“rail contact forces based on freight wagon inverse modelling. Advances in Mechanical Engineering, 2015, 7, 168781401558543.	1.6	19
45	Railway Air Brake Model and Parallel Computing Scheme. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	19
46	Methodology to optimize wedge suspensions of three-piece bogies of railway vehicles. JVC/Journal of Vibration and Control, 2018, 24, 565-581.	2.6	19
47	Mechatronic Modeling of Real-Time Wheel-Rail Contact. , 2013, , .		18
48	Assessing wagon stability in complex train systems. International Journal of Rail Transportation, 2013, 1, 193-217.	2.7	18
49	Longitudinal heavy haul train simulations and energy analysis for typical Australian track routes. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2014, 228, 355-366.	2.0	18
50	Parallel Computing Enables Whole-Trip Train Dynamics Optimizations. Journal of Computational and Nonlinear Dynamics, 2016, 11, .	1.2	18
51	Robust extended Kalman filter of discrete-time Markovian jump nonlinear system under uncertain noise. Journal of Mechanical Science and Technology, 2008, 22, 1132-1139.	1.5	17
52	Wheel flat detectability for Y25 railway freight wagon using vehicle component acceleration signals. Vehicle System Dynamics, 2020, 58, 1893-1913.	3.7	17
53	Conceptual designs of hybrid locomotives for application as heavy haul trains on typical track lines. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2013, 227, 439-452.	2.0	16
54	Influence of AC system design on the realisation of tractive efforts by high adhesion locomotives. Vehicle System Dynamics, 2017, 55, 1241-1264.	3.7	16

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55	Train braking simulation with wheel-rail adhesion model. Vehicle System Dynamics, 2020, 58, 1226-1241.	3.7	16
56	Train energy simulation with locomotive adhesion model. Railway Engineering Science, 2020, 28, 75-84.	4.4	16
57	Friction measurement and creep force modelling methodology for locomotive track damage studies. Wear, 2019, 432-433, 202932.	3.1	15
58	Implementation of a wheelâ€“rail temperature model for locomotive traction studies. International Journal of Rail Transportation, 2017, 5, 1-15.	2.7	14
59	Development and computational performance improvement of the wheel-rail coupling for heavy haul locomotive traction studies. Vehicle System Dynamics, 2022, 60, 156-183.	3.7	14
60	Effects of dent size on the evolution process of rolling contact fatigue damage on defective rail. Wear, 2021, 477, 203894.	3.1	14
61	Parallel multiobjective optimisations of draft gear designs. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2018, 232, 744-758.	2.0	13
62	Traction modelling in train dynamics. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2019, 233, 382-395.	2.0	13
63	Real-time multibody modeling and simulation of a scaled bogie test rig. Railway Engineering Science, 2020, 28, 146-159.	4.4	13
64	Bolster spring fault detection strategy for heavy haul wagons. Vehicle System Dynamics, 2018, 56, 1604-1621.	3.7	12
65	Railway track longitudinal force model. Vehicle System Dynamics, 2021, 59, 155-170.	3.7	11
66	Rail Passenger Vehicle Crashworthiness Simulations Using Multibody Dynamics Approaches. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	10
67	Examining longitudinal train dynamics in ore car tipplers. Vehicle System Dynamics, 2017, 55, 534-551.	3.7	10
68	Curving resistance from wheel-rail interface. Vehicle System Dynamics, 2022, 60, 1018-1036.	3.7	10
69	Research methodology for evaluation of top-of-rail friction management in Australian heavy haul networks. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2014, 228, 631-641.	2.0	9
70	State and mode feedback control for discrete-time Markovian jump linear systems with controllable MTPM. IEEE/CAA Journal of Automatica Sinica, 2019, 6, 830-837.	13.1	9
71	Parallel co-simulation of locomotive wheel wear and rolling contact fatigue in a heavy haul train operational environment. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2021, 235, 166-178.	2.0	9
72	Wheel flat analogue fault detector verification study under dynamic testing conditions using a scaled bogie test rig. International Journal of Rail Transportation, 2022, 10, 177-194.	2.7	9

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73	Longitudinal train dynamics. Vehicle System Dynamics, 2017, 55, 449-449.	3.7	8
74	Feasibility in assessing the dipped rail joint defects through dynamic response of heavy haul locomotive. Journal of Modern Transportation, 2018, 26, 96-106.	2.5	8
75	Ultra-Low Power Sensor Node for On-Board Railway Wagon Monitoring. IEEE Sensors Journal, 2020, 20, 15185-15192.	4.7	8
76	Fatigue life prediction for locomotive bogie frames using virtual prototype technique. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2021, 235, 1122-1131.	2.0	8
77	Long freight trains & long-term rail surface damage â€“ a systems perspective. Vehicle System Dynamics, 0, , 1-24.	3.7	8
78	Preload on draft gear in freight trains. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2018, 232, 1615-1624.	2.0	7
79	Determining the critical speed for hunting of three-piece freight bogies: practice versus simulation approaches. Vehicle System Dynamics, 2022, 60, 3314-3335.	3.7	7
80	Investigation of influence of constraints with radius links on locomotive axle load distribution and wheelset steering ability. Journal of Mechanical Science and Technology, 2013, 27, 1903-1913.	1.5	6
81	The influence of vehicle system dynamics on rail foot heat transfer. Australian Journal of Mechanical Engineering, 2018, 16, 126-138.	2.1	6
82	On the railhead material damage of insulated rail joints: Is it by ratchetting or alternating plasticity?. International Journal of Fatigue, 2019, 128, 105197.	5.7	6
83	A review on design and testing methodologies of modern freight train draft gear system. Railway Engineering Science, 2021, 29, 127-151.	4.4	6
84	Analysis of positioning of wayside charging stations for hybrid locomotive consists in heavy haul train operations. Railway Engineering Science, 2021, 29, 285-298.	4.4	6
85	Analysis of the effects of main design parameters variation on the vibration characteristics of a vehicle sub-frame. Journal of Mechanical Science and Technology, 2009, 23, 960-963.	1.5	5
86	A signal-based fault detection and classification method for heavy haul wagons. Vehicle System Dynamics, 2017, 55, 1807-1822.	3.7	5
87	WHEELâ€“RAIL WEAR INVESTIGATION ON A HEAVY HAUL BALLOON LOOP TRACK THROUGH SIMULATIONS OF SLOW SPEED WAGON DYNAMICS. Transport, 2018, 33, 843-852.	1.2	5
88	Identify severe track geometry defect combinations for maintenance planning. International Journal of Rail Transportation, 2022, 10, 95-113.	2.7	5
89	Implications of Lateral Coupler Forces for Rail Vehicle Curving Resistance. Journal of Computational and Nonlinear Dynamics, 2021, 16, .	1.2	5
90	Locomotive Adhesion Controlâ€‰+â€‰Rail Friction Field Measurementsâ€‰=â€‰?. Lecture Notes in Mechanical Engineering, 2020, , 433-441.	0.4	5

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91	Rapid Charging Energy Storage System for a Hybrid Freight Locomotive. , 2020, , .		5
92	FEA of mechanical behaviour of insulated rail joints due to vertical cyclic wheel loadings. Engineering Failure Analysis, 2022, 133, 105966.	4.0	5
93	Design and safety analysis of a 11-Waggon consist for transporting rails. Australian Journal of Mechanical Engineering, 2023, 21, 1474-1488.	2.1	5
94	Practical Modelling and Simulation of Polymer Draft Gear Connections. , 2018, , .		4
95	Model to estimate infrastructure damage costs for different train types. Australian Journal of Mechanical Engineering, 2019, 17, 219-231.	2.1	4
96	Assessing wagon pack sizes in longitudinal train dynamics simulations. Australian Journal of Mechanical Engineering, 2020, 18, 277-287.	2.1	4
97	Parallel computing of wheel-rail contact. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 2020, 234, 1109-1116.	2.0	4
98	Experimental prototyping of the adhesion braking control system design concept for a mechatronic bogie. Railway Engineering Science, 2021, 29, 15-29.	4.4	4
99	Influence of non-dry condition creep curves in switch negotiation. Vehicle System Dynamics, 2023, 61, 892-904.	3.7	4
100	Guaranteed Performance Robust Kalman Filter for Continuous-Time Markovian Jump Nonlinear System with Uncertain Noise. Mathematical Problems in Engineering, 2008, 2008, 1-12.	1.1	3
101	Switching Controller Design for a Class of Markovian Jump Nonlinear Systems Using Stochastic Small-Gain Theorem. Advances in Difference Equations, 2009, 2009, 1-23.	3.5	3
102	Locomotive Studies Utilizing Multibody and Train Dynamics. , 2017, , .		3
103	Wheel-Rail Interface Condition Estimation via Acoustic Sensors. , 2020, , .		3
104	Rail temperature variation under heavy haul operations. Railway Engineering Science, 0, , 1.	4.4	3
105	A Dynamic Model of Friction Draft Gear. , 2014, , .		2
106	Methodology for Optimization of Friction Draft Gear Design. , 2014, , .		2
107	Modelling of traction in railway vehicles. Vehicle System Dynamics, 2015, 53, 603-604.	3.7	2
108	Rail Cleaning Process and its Influence on Locomotive Performance. , 2017, , .		2

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109	Challenges and Solutions for Integrating Simulation into a Transportation Device. Lecture Notes in Computer Science, 2018, , 317-330.	1.3	2
110	Modelling Complex Series Combinations of Draft Gear Springs. Lecture Notes in Mechanical Engineering, 2020, , 591-598.	0.4	2
111	Wagon Multibody Model and Its Real-Time Application. Mechanisms and Machine Science, 2015, , 523-532.	0.5	2
112	Parallel multiobjective optimisations of draft gear designs. , 0, .		2
113	Nonlinear control of vehicle active suspensions. International Journal of Digital Content Technology and Its Applications, 2012, 6, 94-101.	0.1	2
114	Track Maintenance Reactions for Combined Track Defects. , 2022, , .		2
115	Adaptive simulation and integration method for wheel-rail contact problems in locomotive traction studies. Vehicle System Dynamics, 2022, 60, 4206-4225.	3.7	2
116	Hardware-in-the-loop simulations for railway research. Vehicle System Dynamics, 2013, 51, 497-498.	3.7	1
117	Simulated Comparison of Energy Storage Systems for Heavy Haul Locomotives. , 2017, , .		1
118	Experimental Investigation into the Use of Thermography for the Detection of Rail Foot Flaws. , 2018, , .		1
119	Characterising stochastic friction in railway draft gear. Vehicle System Dynamics, 0, , 1-13.	3.7	1
120	Preface to special issue on hybrid and hydrogen technologies for railway operations. Railway Engineering Science, 2021, 29, 211.	4.4	1
121	Integrated Methodology for Investigation of Wagon Design Concepts by Simulations. , 2014, , .		1
122	Variable Control Setting to Enhance Rail Vehicle Braking Safety. , 2020, , .		1
123	Wheel-Rail Contact Modelling for Locomotive Traction Control System Studies. , 2020, , .		1
124	Innovative Methodology for Heavy Haul Train-Track Interaction Dynamics Issues. Lecture Notes in Mechanical Engineering, 2020, , 899-907.	0.4	1
125	Introduction of Rail Cleaning Effect into Locomotive Traction Study Based on Tribometer Measurements. , 2022, , .		1
126	Integrated Methodology for Investigation of Wagon Bogie Concepts by Simulation. , 2014, , .		0

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127	Laser Based Inspection and Monitoring of Railsâ€"A Finite Element Analysis. , 2018, , .		0
128	Heavy Haul Locomotive Traction Performance under the Implications of In-Train Forces. , 2018, , .		0
129	The Development of Detailed Track Modelling for Simulation of Rail Wear Due to High Adhesion Traction. , 2018, , .		0
130	Use of Laser Ultrasonics for Rail Flaw Detectionâ€"An Insight into Preliminary Experiments. , 2018, , .		0
131	Advanced Co-Simulation Technique for the Study of Heavy Haul Train and Locomotive Dynamics Behavior. , 2018, , .		0
132	Emerging rail vehicle design and simulation in train operational environment. Australian Journal of Mechanical Engineering, 2018, 16, 83-83.	2.1	0
133	Preface to special issue on parallel computing and co-simulation in railway research. International Journal of Rail Transportation, 2020, 8, 109-110.	2.7	0
134	A virtual test platform for railway draft gear designs. International Journal of Heavy Vehicle Systems, 2021, 28, 353.	0.2	0
135	Rail Freight Vehicles. , 2021, , 423-435.		0
136	MODELLING RAIL THERMAL DIFFERENTIALS DUE TO BENDING AND DEFECTS. Transport, 2021, 36, 134-146.	1.2	0
137	Simulation of Long Train Dynamics with the Consideration of Wheel-Rail Contact. Lecture Notes in Mechanical Engineering, 2020, , 466-473.	0.4	0
138	Simulation of Track-Locomotive Interactions in the Longitudinal Direction. Lecture Notes in Mechanical Engineering, 2020, , 769-774.	0.4	0
139	Simulation of Heavy Haul Train Energy Consumption With Locomotive Adhesion Model. , 2020, , .		0