

Maksym Spiryagin

List of Publications by Year in descending order

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Version: 2024-02-01

139
papers

2,530
citations

218677

26
h-index

276875

41
g-index

146
all docs

146
docs citations

146
times ranked

1086
citing authors

#	ARTICLE	IF	CITATIONS
1	Design and safety analysis of a 11-Waggon consist for transporting rails. Australian Journal of Mechanical Engineering, 2023, 21, 1474-1488.	2.1	5
2	Influence of non-dry condition creep curves in switch negotiation. Vehicle System Dynamics, 2023, 61, 892-904.	3.7	4
3	Freight train air brake models. International Journal of Rail Transportation, 2023, 11, 1-49.	2.7	52
4	Curving resistance from wheel-rail interface. Vehicle System Dynamics, 2022, 60, 1018-1036.	3.7	10
5	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
6	Identify severe track geometry defect combinations for maintenance planning. International Journal of Rail Transportation, 2022, 10, 95-113.	2.7	5
7	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
8	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
9	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
10	FEA of mechanical behaviour of insulated rail joints due to vertical cyclic wheel loadings. Engineering Failure Analysis, 2022, 133, 105966.	4.0	5
11	Problems, assumptions and solutions in locomotive design, traction and operational studies. Railway Engineering Science, 2022, 30, 265-288.	4.4	21
12	Rail rolling contact fatigue formation and evolution with surface defects. International Journal of Fatigue, 2022, 158, 106762.	5.7	37
13	Introduction of Rail Cleaning Effect into Locomotive Traction Study Based on Tribometer Measurements. , 2022, , .		1
14	Track Maintenance Reactions for Combined Track Defects. , 2022, , .		2
15	Adaptive simulation and integration method for wheel-rail contact problems in locomotive traction studies. Vehicle System Dynamics, 2022, 60, 4206-4225.	3.7	2
16	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
17	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
18	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

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19	Railway track longitudinal force model. <i>Vehicle System Dynamics</i> , 2021, 59, 155-170.	3.7	11
20	Fatigue life prediction for locomotive bogie frames using virtual prototype technique. <i>Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit</i> , 2021, 235, 1122-1131.	2.0	8
21	A virtual test platform for railway draft gear designs. <i>International Journal of Heavy Vehicle Systems</i> , 2021, 28, 353.	0.2	0
22	Rail Freight Vehicles. , 2021, , 423-435.		0
23	Implications of Lateral Coupler Forces for Rail Vehicle Curving Resistance. <i>Journal of Computational and Nonlinear Dynamics</i> , 2021, 16, .	1.2	5
24	Experimental prototyping of the adhesion braking control system design concept for a mechatronic bogie. <i>Railway Engineering Science</i> , 2021, 29, 15-29.	4.4	4
25	Dynamic response feature of electromechanical coupled drive subsystem in a locomotive excited by wheel flat. <i>Engineering Failure Analysis</i> , 2021, 122, 105248.	4.0	28
26	A review on design and testing methodologies of modern freight train draft gear system. <i>Railway Engineering Science</i> , 2021, 29, 127-151.	4.4	6
27	MODELLING RAIL THERMAL DIFFERENTIALS DUE TO BENDING AND DEFECTS. <i>Transport</i> , 2021, 36, 134-146.	1.2	0
28	Effects of dent size on the evolution process of rolling contact fatigue damage on defective rail. <i>Wear</i> , 2021, 477, 203894.	3.1	14
29	Analysis of positioning of wayside charging stations for hybrid locomotive consists in heavy haul train operations. <i>Railway Engineering Science</i> , 2021, 29, 285-298.	4.4	6
30	Preface to special issue on hybrid and hydrogen technologies for railway operations. <i>Railway Engineering Science</i> , 2021, 29, 211.	4.4	1
31	A review of hydrogen technologies and engineering solutions for railway vehicle design and operations. <i>Railway Engineering Science</i> , 2021, 29, 212-232.	4.4	36
32	Parallel computing in railway research. <i>International Journal of Rail Transportation</i> , 2020, 8, 111-134.	2.7	35
33	Assessing wagon pack sizes in longitudinal train dynamics simulations. <i>Australian Journal of Mechanical Engineering</i> , 2020, 18, 277-287.	2.1	4
34	Parallel computing of wheel-rail contact. <i>Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit</i> , 2020, 234, 1109-1116.	2.0	4
35	Train braking simulation with wheel-rail adhesion model. <i>Vehicle System Dynamics</i> , 2020, 58, 1226-1241.	3.7	16
36	Wheel flat detectability for Y25 railway freight wagon using vehicle component acceleration signals. <i>Vehicle System Dynamics</i> , 2020, 58, 1893-1913.	3.7	17

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37	Ultra-Low Power Sensor Node for On-Board Railway Wagon Monitoring. IEEE Sensors Journal, 2020, 20, 15185-15192.	4.7	8
38	Train energy simulation with locomotive adhesion model. Railway Engineering Science, 2020, 28, 75-84.	4.4	16
39	Fatigue life assessment methods for railway vehicle bogie frames. Engineering Failure Analysis, 2020, 116, 104725.	4.0	42
40	Real-time multibody modeling and simulation of a scaled bogie test rig. Railway Engineering Science, 2020, 28, 146-159.	4.4	13
41	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
42	Locomotive Adhesion Control+Rail Friction Field Measurements. Lecture Notes in Mechanical Engineering, 2020, , 433-441.	0.4	5
43	Modelling Complex Series Combinations of Draft Gear Springs. Lecture Notes in Mechanical Engineering, 2020, , 591-598.	0.4	2
44	Rapid Charging Energy Storage System for a Hybrid Freight Locomotive. , 2020, , .		5
45	Wheel-Rail Interface Condition Estimation via Acoustic Sensors. , 2020, , .		3
46	Variable Control Setting to Enhance Rail Vehicle Braking Safety. , 2020, , .		1
47	Wheel-Rail Contact Modelling for Locomotive Traction Control System Studies. , 2020, , .		1
48	Simulation of Long Train Dynamics with the Consideration of Wheel-Rail Contact. Lecture Notes in Mechanical Engineering, 2020, , 466-473.	0.4	0
49	Innovative Methodology for Heavy Haul Train-Track Interaction Dynamics Issues. Lecture Notes in Mechanical Engineering, 2020, , 899-907.	0.4	1
50	Simulation of Track-Locomotive Interactions in the Longitudinal Direction. Lecture Notes in Mechanical Engineering, 2020, , 769-774.	0.4	0
51	Simulation of Heavy Haul Train Energy Consumption With Locomotive Adhesion Model. , 2020, , .		0
52	A co-simulation approach for heavy haul long distance locomotive-track simulation studies. Vehicle System Dynamics, 2019, 57, 1363-1380.	3.7	30
53	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
54	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

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55	Friction condition characterization for rail vehicle advanced braking system. <i>Mechanical Systems and Signal Processing</i> , 2019, 134, 106324.	8.0	25
56	Friction measurement and creep force modelling methodology for locomotive track damage studies. <i>Wear</i> , 2019, 432-433, 202932.	3.1	15
57	Review of adhesion estimation approaches for rail vehicles. <i>International Journal of Rail Transportation</i> , 2019, 7, 79-102.	2.7	22
58	Traction modelling in train dynamics. <i>Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit</i> , 2019, 233, 382-395.	2.0	13
59	Onboard Condition Monitoring Sensors, Systems and Techniques for Freight Railway Vehicles: A Review. <i>IEEE Sensors Journal</i> , 2019, 19, 4-24.	4.7	114
60	Model to estimate infrastructure damage costs for different train types. <i>Australian Journal of Mechanical Engineering</i> , 2019, 17, 219-231.	2.1	4
61	State and mode feedback control for discrete-time Markovian jump linear systems with controllable MTPM. <i>IEEE/CAA Journal of Automatica Sinica</i> , 2019, 6, 830-837.	13.1	9
62	The influence of vehicle system dynamics on rail foot heat transfer. <i>Australian Journal of Mechanical Engineering</i> , 2018, 16, 126-138.	2.1	6
63	Parallel Co-Simulation Method for Railway Vehicle-Track Dynamics. <i>Journal of Computational and Nonlinear Dynamics</i> , 2018, 13, .	1.2	22
64	Bolster spring fault detection strategy for heavy haul wagons. <i>Vehicle System Dynamics</i> , 2018, 56, 1604-1621.	3.7	12
65	Feasibility in assessing the dipped rail joint defects through dynamic response of heavy haul locomotive. <i>Journal of Modern Transportation</i> , 2018, 26, 96-106.	2.5	8
66	Challenges and Solutions for Integrating Simulation into a Transportation Device. <i>Lecture Notes in Computer Science</i> , 2018, , 317-330.	1.3	2
67	Methodology to optimize wedge suspensions of three-piece bogies of railway vehicles. <i>JVC/Journal of Vibration and Control</i> , 2018, 24, 565-581.	2.6	19
68	Parallel multiobjective optimisations of draft gear designs. <i>Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit</i> , 2018, 232, 744-758.	2.0	13
69	Comparison of locomotive energy storage systems for heavy-haul operation. <i>International Journal of Rail Transportation</i> , 2018, 6, 1-15.	2.7	20
70	Rail Flaw Detection Technologies for Safer, Reliable Transportation: A Review. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2018, 140, .	1.6	52
71	WHEEL RAIL WEAR INVESTIGATION ON A HEAVY HAUL BALLOON LOOP TRACK THROUGH SIMULATIONS OF SLOW SPEED WAGON DYNAMICS. <i>Transport</i> , 2018, 33, 843-852.	1.2	5
72	International benchmarking of longitudinal train dynamics simulators: results. <i>Vehicle System Dynamics</i> , 2018, 56, 343-365.	3.7	50

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73	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
74	Practical Modelling and Simulation of Polymer Draft Gear Connections. , 2018, , .		4
75	Laser Based Inspection and Monitoring of Railsâ€™A Finite Element Analysis. , 2018, , .		0
76	Heavy Haul Locomotive Traction Performance under the Implications of In-Train Forces. , 2018, , .		0
77	The Development of Detailed Track Modelling for Simulation of Rail Wear Due to High Adhesion Traction. , 2018, , .		0
78	Experimental Investigation into the Use of Thermography for the Detection of Rail Foot Flaws. , 2018, , .		1
79	Use of Laser Ultrasonics for Rail Flaw Detectionâ€™An Insight into Preliminary Experiments. , 2018, , .		0
80	Advanced Co-Simulation Technique for the Study of Heavy Haul Train and Locomotive Dynamics Behavior. , 2018, , .		0
81	Emerging rail vehicle design and simulation in train operational environment. Australian Journal of Mechanical Engineering, 2018, 16, 83-83.	2.1	0
82	Implementation of a wheelâ€™rail temperature model for locomotive traction studies. International Journal of Rail Transportation, 2017, 5, 1-15.	2.7	14
83	Longitudinal train dynamics. Vehicle System Dynamics, 2017, 55, 449-449.	3.7	8
84	International benchmarking of longitudinal train dynamics simulators: benchmarking questions. Vehicle System Dynamics, 2017, 55, 450-463.	3.7	32
85	Rail Passenger Vehicle Crashworthiness Simulations Using Multibody Dynamics Approaches. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	10
86	Parallel Computing Scheme for Three-Dimensional Long Train System Dynamics. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	20
87	Railway Air Brake Model and Parallel Computing Scheme. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	1.2	19
88	Modelling, simulation and applications of longitudinal train dynamics. Vehicle System Dynamics, 2017, 55, 1498-1571.	3.7	85
89	A signal-based fault detection and classification method for heavy haul wagons. Vehicle System Dynamics, 2017, 55, 1807-1822.	3.7	5
90	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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91	An overview: modern techniques for railway vehicle on-board health monitoring systems. <i>Vehicle System Dynamics</i> , 2017, 55, 1045-1070.	3.7	123
92	Examining longitudinal train dynamics in ore car tipplers. <i>Vehicle System Dynamics</i> , 2017, 55, 534-551.	3.7	10
93	Simulated Comparison of Energy Storage Systems for Heavy Haul Locomotives. , 2017, , .		1
94	Locomotive Studies Utilizing Multibody and Train Dynamics. , 2017, , .		3
95	Rail Cleaning Process and its Influence on Locomotive Performance. , 2017, , .		2
96	Longitudinal train dynamics: an overview. <i>Vehicle System Dynamics</i> , 2016, 54, 1688-1714.	3.7	134
97	Parallel Computing Enables Whole-Trip Train Dynamics Optimizations. <i>Journal of Computational and Nonlinear Dynamics</i> , 2016, 11, .	1.2	18
98	Application of flywheel energy storage for heavy haul locomotives. <i>Applied Energy</i> , 2015, 157, 607-618.	10.1	51
99	Advanced dynamic modelling for friction draft gears. <i>Vehicle System Dynamics</i> , 2015, 53, 475-492.	3.7	49
100	Simplified and advanced modelling of traction control systems of heavy-haul locomotives. <i>Vehicle System Dynamics</i> , 2015, 53, 672-691.	3.7	38
101	Modelling of traction in railway vehicles. <i>Vehicle System Dynamics</i> , 2015, 53, 603-604.	3.7	2
102	Monitoring vertical wheel-rail contact forces based on freight wagon inverse modelling. <i>Advances in Mechanical Engineering</i> , 2015, 7, 168781401558543.	1.6	19
103	Wagon Multibody Model and Its Real-Time Application. <i>Mechanisms and Machine Science</i> , 2015, , 523-532.	0.5	2
104	Integrated Methodology for Investigation of Wagon Bogie Concepts by Simulation. , 2014, , .		0
105	Adhesion estimation and its implementation for traction control of locomotives. <i>International Journal of Rail Transportation</i> , 2014, 2, 187-204.	2.7	36
106	A review of dynamics modelling of friction draft gear. <i>Vehicle System Dynamics</i> , 2014, 52, 733-758.	3.7	76
107	A Dynamic Model of Friction Draft Gear. , 2014, , .		2
108	Research methodology for evaluation of top-of-rail friction management in Australian heavy haul networks. <i>Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit</i> , 2014, 228, 631-641.	2.0	9

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109	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
110	A review of dynamics modelling of friction wedge suspensions. Vehicle System Dynamics, 2014, 52, 1389-1415.	3.7	34
111	Methodology for Optimization of Friction Draft Gear Design. , 2014, , .		2
112	Integrated Methodology for Investigation of Wagon Design Concepts by Simulations. , 2014, , .		1
113	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
114	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
115	Creep force modelling for rail traction vehicles based on the Fastsim algorithm. Vehicle System Dynamics, 2013, 51, 1765-1783.	3.7	93
116	Hardware-in-the-loop simulations for railway research. Vehicle System Dynamics, 2013, 51, 497-498.	3.7	1
117	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
118	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
119	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
120	Mechatronic Modeling of Real-Time Wheel-Rail Contact. , 2013, , .		18
121	Assessing wagon stability in complex train systems. International Journal of Rail Transportation, 2013, 1, 193-217.	2.7	18
122	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
123	Wagon instability in long trains. Vehicle System Dynamics, 2012, 50, 303-317.	3.7	54
124	Co-simulation of a mechatronic system using Gensys and Simulink. Vehicle System Dynamics, 2012, 50, 495-507.	3.7	31
125	Nonlinear control of vehicle active suspensions. International Journal of Digital Content Technology and Its Applications, 2012, 6, 94-101.	0.1	2
126	Development of Traction Control for Hauling Locomotives. Journal of System Design and Dynamics, 2011, 5, 1214-1225.	0.3	21

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127	Numerical calculation of temperature in the wheel-rail flange contact and implications for lubricant choice. <i>Wear</i> , 2010, 268, 287-293.	3.1	21
128	Switching Controller Design for a Class of Markovian Jump Nonlinear Systems Using Stochastic Small-Gain Theorem. <i>Advances in Difference Equations</i> , 2009, 2009, 1-23.	3.5	3
129	Analysis of the effects of main design parameters variation on the vibration characteristics of a vehicle sub-frame. <i>Journal of Mechanical Science and Technology</i> , 2009, 23, 960-963.	1.5	5
130	Robust extended Kalman filter of discrete-time Markovian jump nonlinear system under uncertain noise. <i>Journal of Mechanical Science and Technology</i> , 2008, 22, 1132-1139.	1.5	17
131	Control system for maximum use of adhesive forces of a railway vehicle in a tractive mode. <i>Mechanical Systems and Signal Processing</i> , 2008, 22, 709-720.	8.0	55
132	Modeling of Adhesion for Railway Vehicles. <i>Journal of Adhesion Science and Technology</i> , 2008, 22, 1017-1034.	2.6	26
133	Guaranteed Performance Robust Kalman Filter for Continuous-Time Markovian Jump Nonlinear System with Uncertain Noise. <i>Mathematical Problems in Engineering</i> , 2008, 2008, 1-12.	1.1	3
134	Characterising stochastic friction in railway draft gear. <i>Vehicle System Dynamics</i> , 0, , 1-13.	3.7	1
135	Parallel multiobjective optimisations of draft gear designs. , 0, .		2
136	Design and Simulation of Heavy Haul Locomotives and Trains. , 0, .		30
137	Design and Simulation of Rail Vehicles. , 0, .		84
138	Rail temperature variation under heavy haul operations. <i>Railway Engineering Science</i> , 0, , 1.	4.4	3
139	Long freight trains & long-term rail surface damage – a systems perspective. <i>Vehicle System Dynamics</i> , 0, , 1-24.	3.7	8