

Martin Treiber

List of Publications by Year in descending order

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95
papers

11,406
citations

66234

42
h-index

79541

73
g-index

101
all docs

101
docs citations

101
times ranked

3952
citing authors

#	ARTICLE	IF	CITATIONS
1	Congested traffic states in empirical observations and microscopic simulations. <i>Physical Review E</i> , 2000, 62, 1805-1824.	0.8	2,876
2	Traffic Flow Dynamics. , 2013, , .		821
3	General Lane-Changing Model MOBIL for Car-Following Models. <i>Transportation Research Record</i> , 2007, 1999, 86-94.	1.0	802
4	Enhanced intelligent driver model to access the impact of driving strategies on traffic capacity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 4585-4605.	1.6	600
5	Adaptive cruise control design for active congestion avoidance. <i>Transportation Research Part C: Emerging Technologies</i> , 2008, 16, 668-683.	3.9	470
6	Delays, inaccuracies and anticipation in microscopic traffic models. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2006, 360, 71-88.	1.2	425
7	Calibrating Car-Following Models by Using Trajectory Data. <i>Transportation Research Record</i> , 2008, 2088, 148-156.	1.0	339
8	Estimating Acceleration and Lane-Changing Dynamics from Next Generation Simulation Trajectory Data. <i>Transportation Research Record</i> , 2008, 2088, 90-101.	1.0	311
9	Derivation, properties, and simulation of a gas-kinetic-based, nonlocal traffic model. <i>Physical Review E</i> , 1999, 59, 239-253.	0.8	308
10	Micro- and macro-simulation of freeway traffic. <i>Mathematical and Computer Modelling</i> , 2002, 35, 517-547.	2.0	308
11	Gas-Kinetic-Based Traffic Model Explaining Observed Hysteretic Phase Transition. <i>Physical Review Letters</i> , 1998, 81, 3042-3045.	2.9	287
12	Phase Diagram of Traffic States in the Presence of Inhomogeneities. <i>Physical Review Letters</i> , 1999, 82, 4360-4363.	2.9	244
13	MASTER: macroscopic traffic simulation based on a gas-kinetic, non-local traffic model. <i>Transportation Research Part B: Methodological</i> , 2001, 35, 183-211.	2.8	188
14	Three-phase traffic theory and two-phase models with a fundamental diagram in the light of empirical stylized facts. <i>Transportation Research Part B: Methodological</i> , 2010, 44, 983-1000.	2.8	159
15	How Reaction Time, Update Time, and Adaptation Time Influence the Stability of Traffic Flow. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2008, 23, 125-137.	6.3	145
16	Memory effects in microscopic traffic models and wide scattering in flow-density data. <i>Physical Review E</i> , 2003, 68, 046119.	0.8	144
17	Understanding widely scattered traffic flows, the capacity drop, and platoons as effects of variance-driven time gaps. <i>Physical Review E</i> , 2006, 74, 016123.	0.8	138
18	Theoretical vs. empirical classification and prediction of congested traffic states. <i>European Physical Journal B</i> , 2009, 69, 583-598.	0.6	110

#	ARTICLE	IF	CITATIONS
19	Reconstructing the Traffic State by Fusion of Heterogeneous Data. Computer-Aided Civil and Infrastructure Engineering, 2011, 26, 408-419.	6.3	110
20	Macroscopic simulation of widely scattered synchronized traffic states. Journal of Physics A, 1999, 32, L17-L23.	1.6	107
21	Microscopic Calibration and Validation of Car-Following Models – A Systematic Approach. Procedia, Social and Behavioral Sciences, 2013, 80, 922-939.	0.5	106
22	Extending Adaptive Cruise Control to Adaptive Driving Strategies. Transportation Research Record, 2007, 2000, 16-24.	1.0	97
23	Connectivity Statistics of Store-and-Forward Intervehicle Communication. IEEE Transactions on Intelligent Transportation Systems, 2010, 11, 172-181.	4.7	95
24	Cellular automaton model simulating spatiotemporal patterns, phase transitions and concave growth pattern of oscillations in traffic flow. Transportation Research Part B: Methodological, 2016, 93, 560-575.	2.8	91
25	Numerical simulation of macroscopic traffic equations. Computing in Science and Engineering, 1999, 1, 89-98.	1.2	88
26	Analytical investigation of oscillations in intersecting flows of pedestrian and vehicle traffic. Physical Review E, 2005, 72, 046130.	0.8	87
27	Social force models for pedestrian traffic – state of the art. Transport Reviews, 2018, 38, 625-653.	4.7	86
28	Modeling Driver Behavior as Sequential Risk-Taking Task. Transportation Research Record, 2008, 2088, 208-217.	1.0	85
29	The Intelligent Driver Model with Stochasticity -New Insights Into Traffic Flow Oscillations. Transportation Research Procedia, 2017, 23, 174-187.	0.8	75
30	TRAFFIC THEORY: Jams, Waves, and Clusters. , 1998, 282, 2001-2003.		73
31	From behavioral psychology to acceleration modeling: Calibration, validation, and exploration of drivers' cognitive and safety parameters in a risk-taking environment. Transportation Research Part B: Methodological, 2015, 78, 32-53.	2.8	72
32	Microscopic driving theory with oscillatory congested states: Model and empirical verification. Transportation Research Part B: Methodological, 2015, 71, 138-157.	2.8	71
33	Bipolar Electrodiffusion Model for Electroconvection in Nematics. Molecular Crystals and Liquid Crystals, 1995, 261, 311-326.	0.3	70
34	Origin of Traveling Rolls in Electroconvection of Nematic Liquid Crystals. Physical Review Letters, 1996, 76, 319-322.	2.9	69
35	Validation of traffic flow models with respect to the spatiotemporal evolution of congested traffic patterns. Transportation Research Part C: Emerging Technologies, 2012, 21, 31-41.	3.9	69
36	Langevin method for a continuous stochastic car-following model and its stability conditions. Transportation Research Part C: Emerging Technologies, 2019, 105, 599-610.	3.9	69

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37	Evidence of convective instability in congested traffic flow: A systematic empirical and theoretical investigation. <i>Transportation Research Part B: Methodological</i> , 2011, 45, 1362-1377.	2.8	59
38	Interpreting the wide scattering of synchronized traffic data by time gap statistics. <i>Physical Review E</i> , 2003, 68, 067101.	0.8	56
39	An Open-Source Microscopic Traffic Simulator. <i>IEEE Intelligent Transportation Systems Magazine</i> , 2010, 2, 6-13.	2.6	56
40	Influence of Reaction Times and Anticipation on Stability of Vehicular Traffic Flow. <i>Transportation Research Record</i> , 2007, 1999, 23-29.	1.0	54
41	Empirical Measurement of Freeway Oscillation Characteristics. <i>Transportation Research Record</i> , 2008, 2088, 57-67.	1.0	52
42	The Intelligent Driver Model with stochasticity – New insights into traffic flow oscillations. <i>Transportation Research Part B: Methodological</i> , 2018, 117, 613-623.	2.8	51
43	Comparing numerical integration schemes for time-continuous car-following models. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2015, 419, 183-195.	1.2	46
44	Cellular automaton model within the fundamental-diagram approach reproducing some findings of the three-phase theory. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2012, 391, 3129-3139.	1.2	45
45	Improved 2D intelligent driver model in the framework of three-phase traffic theory simulating synchronized flow and concave growth pattern of traffic oscillations. <i>Transportation Research Part F: Traffic Psychology and Behaviour</i> , 2016, 41, 55-65.	1.8	45
46	Coupled vehicle and information flows: Message transport on a dynamic vehicle network. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2006, 363, 73-81.	1.2	43
47	On the role of speed adaptation and spacing indifference in traffic instability: Evidence from car-following experiments and its stochastic model. <i>Transportation Research Part B: Methodological</i> , 2019, 129, 334-350.	2.8	43
48	Coupled complex Ginzburg-Landau equations for the weak electrolyte model of electroconvection. <i>Physical Review E</i> , 1998, 58, 1973-1982.	0.8	42
49	Self-driven particle model for mixed traffic and other disordered flows. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2018, 509, 1-11.	1.2	42
50	Jam-Avoiding Adaptive Cruise Control (ACC) and its Impact on Traffic Dynamics. , 2007, , 633-643.		42
51	Microscopic Simulation of Congested Traffic. , 2000, , 365-376.		39
52	Understanding interarrival and interdeparture time statistics from interactions in queuing systems. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2006, 363, 62-72.	1.2	38
53	Autonomous Detection and Anticipation of Jam Fronts from Messages Propagated by Intervehicle Communication. <i>Transportation Research Record</i> , 2007, 1999, 3-12.	1.0	35
54	Hamilton-like statistics in onedimensional driven dissipative many-particle systems. <i>European Physical Journal B</i> , 2009, 68, 607-618.	0.6	33

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55	Modelling supported driving as an optimal control cycle: Framework and model characteristics. Transportation Research Part C: Emerging Technologies, 2013, 36, 547-563.	3.9	31
56	Verkehrsdynamik und -simulation. Springer-Lehrbuch, 2010, , .	0.1	29
57	Travelling Waves in Electroconvection of the Nematic Phase 5: A Test of the Weak Electrolyte Model. Journal De Physique II, 1997, 7, 649-661.	0.9	26
58	Enskog equations for traffic flow evaluated up to Navier-Stokes order. Archive for History of Exact Sciences, 1998, 1, 21-31.	0.2	22
59	Modeling Lane-Changing Decisions with MOBIL. , 2009, , 211-221.		22
60	Analytical investigation of innovation dynamics considering stochasticity in the evaluation of fitness. Physical Review E, 2005, 71, 067101.	0.8	19
61	Two fast implementations of the Adaptive Smoothing Method used in highway traffic state estimation. , 2010, , .		16
62	Calibrating the Local and Platoon Dynamics of Car-Following Models on the Reconstructed NGSIM Data. , 2016, , 515-522.		16
63	Evidence of Convective Instability in Congested Traffic Flow: A Systematic Empirical and Theoretical Investigation. Procedia, Social and Behavioral Sciences, 2011, 17, 683-701.	0.5	14
64	Calibrating Wiedemann-99 Model Parameters to Trajectory Data of Mixed Vehicular Traffic. Transportation Research Record, 2022, 2676, 718-735.	1.0	14
65	An Adaptive Smoothing Method for Traffic State Identification from Incomplete Information. Lecture Notes in Computational Science and Engineering, 2003, , 343-360.	0.1	14
66	Modelling Supported Driving as an Optimal Control Cycle: Framework and Model Characteristics. Procedia, Social and Behavioral Sciences, 2013, 80, 491-511.	0.5	13
67	A behavioral microeconomic foundation for car-following models. Transportation Research Part C: Emerging Technologies, 2020, 113, 228-244.	3.9	13
68	Modelling widely scattered states in "synchronized"™ traffic flow and possible relevance for stock market dynamics. Physica A: Statistical Mechanics and Its Applications, 2002, 303, 251-260.	1.2	12
69	Longitudinal hopping in intervehicle communication: Theory and simulations on modeled and empirical trajectory data. Physical Review E, 2008, 78, 036102.	0.8	12
70	Macroscopic Simulation of Open Systems and Micro-Macro Link. , 2000, , 383-388.		12
71	Stochastic envelope equations for nonequilibrium transitions and application to thermal fluctuations in electroconvection in nematic liquid crystals. Physical Review E, 1994, 49, 3184-3198.	0.8	11
72	Analytic expressions for the stochastic amplitude equation for Taylor-Couette flow. Physical Review E, 1996, 53, 577-585.	0.8	11

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73	On the identification of thresholds in travel choice modelling. Journal of Choice Modelling, 2015, 17, 1-9.	1.2	11
74	INFLUENCE OF REACTION TIMES AND ANTICIPATION ON THE STABILITY OF VEHICULAR TRAFFIC FLOW. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 205-210.	0.4	10
75	Automatic and efficient driving strategies while approaching a traffic light. , 2014, , .		10
76	Empirical and experimental study on the growth pattern of traffic oscillations upstream of fixed bottleneck and model test. Transportation Research Part C: Emerging Technologies, 2022, 140, 103729.	3.9	9
77	Calibration of Car-Following Models Using Floating Car Data. , 2009, , 117-127.		8
78	Review of the cellular automata models for reproducing synchronized traffic flow. Transportmetrica A: Transport Science, 2021, 17, 766-800.	1.3	8
79	Crowd Flow Modeling of Athletes in Mass Sports Events: A Macroscopic Approach. , 2015, , 21-29.		6
80	Simulating bicycle traffic by the intelligent-driver model-Reproducing the traffic-wave characteristics observed in a bicycle-following experiment. Journal of Traffic and Transportation Engineering (English Edition), 2020, 7, 19-29.	2.0	3
81	Decentralized Approaches to Adaptive Traffic Control. Understanding Complex Systems, 2008, , 189-199.	0.3	3
82	Special issue on connected and automated traffic systems. Transportmetrica A: Transport Science, 2021, 17, 1-4.	1.3	3
83	Cellular Automaton Model with Non-hypothetical Congested Steady State Reproducing the Three-Phase Traffic Flow Theory. Lecture Notes in Computer Science, 2014, , 610-619.	1.0	2
84	Self-Healing Networks - Gridlock Prevention with Capacity Regulating Traffic Lights. , 2012, , .		1
85	Theoretical vs. Empirical Classification and Prediction of Congested Traffic States. Lecture Notes in Mathematics, 2013, , 303-333.	0.1	1
86	Modelling and Simulating Several Time-Delay Mechanisms in Human and Automated Driving. , 2009, , 413-419.		1
87	Behavioral-Based Pedestrian Modeling Approach: Formulation, Sensitivity Analysis, and Calibration. Transportation Research Record, 2022, 2676, 334-347.	1.0	1
88	A Behavioral Microeconomic Foundation for Car-following Models. Transportation Research Procedia, 2019, 38, 565-585.	0.8	0
89	Trajektorien und Floating-Car-Daten. Springer-Lehrbuch, 2010, , 7-11.	0.1	0
90	Phasendiagramm der Stauzustände. Springer-Lehrbuch, 2010, , 243-253.	0.1	0

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91	Modellgestützte Optimierung des Verkehrsflusses. Springer-Lehrbuch, 2010, , 289-301.	0.1	0
92	Fahrstreifenwechsel und andere diskrete Entscheidungen. Springer-Lehrbuch, 2010, , 197-209.	0.1	0
93	Stautentstehung und Stauausbreitung. Springer-Lehrbuch, 2010, , 257-266.	0.1	0
94	Thermal Fluctuations in Pattern Forming Instabilities. Partially Ordered Systems, 1996, , 307-331.	6.5	0
95	Simulating Bicycle Traffic by the Intelligent-Driver Model: Reproducing the Traffic-Wave Characteristics Observed in a Bicycle-Following Experiment. , 2019, , 507-515.		0