Martin Treiber

List of Publications by Year
in descending order

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	Calibrating Wiedemann-99 Model Parameters to Trajectory Data of Mixed Vehicular Traffic. Transportation Research Record, 2022, 2676, 718-735.	1.0	14
2	Behavioral-Based Pedestrian Modeling Approach: Formulation, Sensitivity Analysis, and Calibration. Transportation Research Record, 2022, 2676, 334-347.	1.0	1
3	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
4	Review of the cellular automata models for reproducing synchronized traffic flow. Transportmetrica A: Transport Science, 2021, 17, 766-800.	1.3	8
5	Special issue on connected and automated traffic systems. Transportmetrica A: Transport Science, 2021, 17, 1-4.	1.3	3
6	A behavioral microeconomic foundation for car-following models. Transportation Research Part C: Emerging Technologies, 2020, 113, 228-244.	3.9	13
7	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
8	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
9	On the role of speed adaptation and spacing indifference in traffic instability: Evidence from car-following experiments and its stochastic model. Transportation Research Part B: Methodological, 2019, 129, 334-350.	2.8	43
10	A Behavioral Microeconomic Foundation for Car-following Models. Transportation Research Procedia, 2019, 38, 565-585.	0.8	0
11	Simulating Bicycle Traffic by the Intelligent-Driver Model: Reproducing the Traffic-Wave Characteristics Observed in a Bicycle-Following Experiment. , 2019, , 507-515.		0
12	The Intelligent Driver Model with stochasticity â€“ New insights into traffic flow oscillations. Transportation Research Part B: Methodological, 2018, 117, 613-623.	2.8	51
13	Social force models for pedestrian traffic â€“ state of the art. Transport Reviews, 2018, 38, 625-653.	4.7	86
14	Self-driven particle model for mixed traffic and other disordered flows. Physica A: Statistical Mechanics and Its Applications, 2018, 509, 1-11.	1.2	42
15	The Intelligent Driver Model with Stochasticity -New Insights Into Traffic Flow Oscillations. Transportation Research Procedia, 2017, 23, 174-187.	0.8	75
16	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
17	Improved 2D intelligent driver model in the framework of three-phase traffic theory simulating synchronized flow and concave growth pattern of traffic oscillations. Transportation Research Part F: Traffic Psychology and Behaviour, 2016, 41, 55-65.	1.8	45
18	Calibrating the Local and Platoon Dynamics of Car-Following Models on the Reconstructed NGSIM Data. , 2016, , 515-522.		16

#	Article	IF	Citations
19	On the identification of thresholds in travel choice modelling. Journal of Choice Modelling, 2015, 17, 1-9.	1.2	11
20	From behavioral psychology to acceleration modeling: Calibration, validation, and exploration of driversâ€™ cognitive and safety parameters in a risk-taking environment. Transportation Research Part B: Methodological, 2015, 78, 32-53.	2.8	72
21	Microscopic driving theory with oscillatory congested states: Model and empirical verification. Transportation Research Part B: Methodological, 2015, 71, 138-157.	2.8	71
22	Comparing numerical integration schemes for time-continuous car-following models. Physica A: Statistical Mechanics and its Applications, 2015, 419, 183-195.	1.2	46
23	Crowd Flow Modeling of Athletes in Mass Sports Events: A Macroscopic Approach. , 2015, , 21-29.		6
24	Automatic and efficient driving strategies while approaching a traffic light. , 2014, , .		10
25	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
26	Modelling Supported Driving as an Optimal Control Cycle: Framework and Model Characteristics. Procedia, Social and Behavioral Sciences, 2013, 80, 491-511.	0.5	13
27	Microscopic Calibration and Validation of Car-Following Models â€“ A Systematic Approach. Procedia, Social and Behavioral Sciences, 2013, 80, 922-939.	0.5	106
28	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
29	Traffic Flow Dynamics. , 2013, , .		821
30	Theoretical vs. Empirical Classification and Prediction of Congested Traffic States. Lecture Notes in Mathematics, 2013, , 303-333.	0.1	1
31	Self-Healing Networks - Gridlock Prevention with Capacity Regulating Traffic Lights. , 2012, , .		1
32	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
33	Cellular automaton model within the fundamental-diagram approach reproducing some findings of the three-phase theory. Physica A: Statistical Mechanics and its Applications, 2012, 391, 3129-3139.	1.2	45
34	Evidence of convective instability in congested traffic flow: A systematic empirical and theoretical investigation. Transportation Research Part B: Methodological, 2011, 45, 1362-1377.	2.8	59
35	Reconstructing the Traffic State by Fusion of Heterogeneous Data. Computer-Aided Civil and Infrastructure Engineering, 2011, 26, 408-419.	6.3	110
36	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

#	Article	IF	Citations
37	An Open-Source Microscopic Traffic Simulator. IEEE Intelligent Transportation Systems Magazine, 2010, 2, 6-13.	2.6	56
38	Three-phase traffic theory and two-phase models with a fundamental diagram in the light of empirical stylized facts. Transportation Research Part B: Methodological, 2010, 44, 983-1000.	2.8	159
39	Connectivity Statistics of Store-and-Forward Intervehicle Communication. IEEE Transactions on Intelligent Transportation Systems, 2010, 11, 172-181.	4.7	95
40	Enhanced intelligent driver model to access the impact of driving strategies on traffic capacity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 4585-4605.	1.6	600
41	Verkehrsdynamik und -simulation. Springer-Lehrbuch, 2010, , .	0.1	29
42	Two fast implementations of the Adaptive Smoothing Method used in highway traffic state estimation. , 2010, , .		16
43	Trajektoriendaten und Floating-Car-Daten. Springer-Lehrbuch, 2010, , 7-11.	0.1	0
44	Phasendiagramm der StauzustÃnde. Springer-Lehrbuch, 2010, , 243-253.	0.1	0
45	ModellgestÃ¼tzte Optimierung des Verkehrsflusses. Springer-Lehrbuch, 2010, , 289-301.	0.1	0
46	Fahrstreifenwechsel und andere diskrete Entscheidungen. Springer-Lehrbuch, 2010, , 197-209.	0.1	0
47	Stauentstehung und Stauausbreitung. Springer-Lehrbuch, 2010, , 257-266.	0.1	0
48	Hamilton-like statistics in onedimensional driven dissipative many-particle systems. European Physical Journal B, 2009, 68, 607-618.	0.6	33
49	Theoretical vs. empirical classification and prediction of congested traffic states. European Physical Journal B, 2009, 69, 583-598.	0.6	110
50	Calibration of Car-Following Models Using Floating Car Data. , 2009, , 117-127.		8
51	Modeling Lane-Changing Decisions with MOBIL. , 2009, , 211-221.		22
52	Modelling and Simulating Several Time-Delay Mechanisms in Human and Automated Driving. , 2009, , 413-419.		1
53	Adaptive cruise control design for active congestion avoidance. Transportation Research Part C: Emerging Technologies, 2008, 16, 668-683.	3.9	470
54	How Reaction Time, Update Time, and Adaptation Time Influence the Stability of Traffic Flow. Computer-Aided Civil and Infrastructure Engineering, 2008, 23, 125-137.	6.3	145

#	Article	IF	Citations
55	Calibrating Car-Following Models by Using Trajectory Data. Transportation Research Record, 2008, 2088, 148-156.	1.0	339
56	Longitudinal hopping in intervehicle communication: Theory and simulations on modeled and empirical trajectory data. Physical Review E, 2008, 78, 036102.	0.8	12
57	Modeling Driver Behavior as Sequential Risk-Taking Task. Transportation Research Record, 2008, 2088, 208-217.	1.0	85
58	Estimating Acceleration and Lane-Changing Dynamics from Next Generation Simulation Trajectory Data. Transportation Research Record, 2008, 2088, 90-101.	1.0	311
59	Empirical Measurement of Freeway Oscillation Characteristics. Transportation Research Record, 2008, 2088, 57-67.	1.0	52
60	Decentralized Approaches to Adaptive Traffic Control. Understanding Complex Systems, 2008, , 189-199.	0.3	3
61	Influence of Reaction Times and Anticipation on Stability of Vehicular Traffic Flow. Transportation Research Record, 2007, 1999, 23-29.	1.0	54
62	General Lane-Changing Model MOBIL for Car-Following Models. Transportation Research Record, 2007, 1999, 86-94.	1.0	802
63	Autonomous Detection and Anticipation of Jam Fronts from Messages Propagated by Intervehicle Communication. Transportation Research Record, 2007, 1999, 3-12.	1.0	35
64	Extending Adaptive Cruise Control to Adaptive Driving Strategies. Transportation Research Record, 2007, 2000, 16-24.	1.0	97
65	Jam-Avoiding Adaptive Cruise Control (ACC) and its Impact on Traffic Dynamics. , 2007, , 633-643.		42
66	Understanding widely scattered traffic flows, the capacity drop, and platoons as effects of variance-driven time gaps. Physical Review E, 2006, 74, 016123.	0.8	138
67	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
68	Delays, inaccuracies and anticipation in microscopic traffic models. Physica A: Statistical Mechanics and Its Applications, 2006, 360, 71-88.	1.2	425
69	Understanding interarrival and interdeparture time statistics from interactions in queuing systems. Physica A: Statistical Mechanics and Its Applications, 2006, 363, 62-72.	1.2	38
70	Coupled vehicle and information flows: Message transport on a dynamic vehicle network. Physica A: Statistical Mechanics and Its Applications, 2006, 363, 73-81.	1.2	43
71	Analytical investigation of innovation dynamics considering stochasticity in the evaluation of fitness. Physical Review E, 2005, 71, 067101.	0.8	19
72	Analytical investigation of oscillations in intersecting flows of pedestrian and vehicle traffic. Physical Review E, 2005, 72, 046130.	0.8	87

#	Article	IF	Citations
73	Interpreting the wide scattering of synchronized traffic data by time gap statistics. Physical Review E, 2003, 68, 067101.	0.8	56
74	Memory effects in microscopic traffic models and wide scattering in flow-density data. Physical Review E, 2003, 68, 046119.	0.8	144
75	An Adaptive Smoothing Method for Traffic State Identification from Incomplete Information. Lecture Notes in Computational Science and Engineering, 2003, , 343-360.	0.1	14
76	Micro- and macro-simulation of freeway traffic. Mathematical and Computer Modelling, 2002, 35, 517-547.	2.0	308
77	Modelling widely scattered states in â€˜synchronizedâ€™ traffic flow and possible relevance for stock market dynamics. Physica A: Statistical Mechanics and Its Applications, 2002, 303, 251-260.	1.2	12
78	MASTER: macroscopic traffic simulation based on a gas-kinetic, non-local traffic model. Transportation Research Part B: Methodological, 2001, 35, 183-211.	2.8	188
79	Congested traffic states in empirical observations and microscopic simulations. Physical Review E, 2000, 62, 1805-1824.	0.8	2,876
80	Microscopic Simulation of Congested Traffic. , 2000, , 365-376.		39
81	Macroscopic Simulation of Open Systems and Micro-Macro Link. , 2000, , 383-388.		12
82	Derivation, properties, and simulation of a gas-kinetic-based, nonlocal traffic model. Physical Review E, 1999, 59, 239-253.	0.8	308
83	Macroscopic simulation of widely scattered synchronized traffic states. Journal of Physics A, 1999, 32, L17-L23.	1.6	107
84	Phase Diagram of Traffic States in the Presence of Inhomogeneities. Physical Review Letters, 1999, 82, 4360-4363.	2.9	244
85	Numerical simulation of macroscopic traffic equations. Computing in Science and Engineering, 1999, 1, 89-98.	1.2	88
86	Enskog equations for traffic flow evaluated up to Navier-Stokes order. Archive for History of Exact Sciences, 1998, 1, 21-31.	0.2	22
87	TRAFFIC THEORY:Jams, Waves, and Clusters. , 1998, 282, 2001-2003.		73
88	Gas-Kinetic-Based Traffic Model Explaining Observed Hysteretic Phase Transition. Physical Review Letters, 1998, 81, 3042-3045.	2.9	287
89	Coupled complex Ginzburg-Landau equations for the weak electrolyte model of electroconvection. Physical Review E, 1998, 58, 1973-1982.	0.8	42
90	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

#	Article	IF	Citations
91	Origin of Traveling Rolls in Electroconvection of Nematic Liquid Crystals. Physical Review Letters, 1996, 76, 319-322.	2.9	69
92	Analytic expressions for the stochastic amplitude equation for Taylor-Couette flow. Physical Review E, 1996, 53, 577-585.	0.8	11
93	Thermal Fluctuations in Pattern Forming Instabilities. Partially Ordered Systems, 1996, , 307-331.	6.5	0
94	Bipolar Electrodiffusion Model for Electroconvection in Nematics. Molecular Crystals and Liquid Crystals, 1995, 261, 311-326.	0.3	70
95	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