



Welcome to AHB45 Committee on Traffic Flow Theory and Characteristics

January 8, 2018



Self-Introductions Members/Friends

Please don't forget to sign in!



Agenda



- Review and Approval of Minutes S. Ahn
- Committee Membership Update S. Ahn
- Chair Report S. Ahn
- TRB Report R. Bertini and R. Cunard
- Transportation Systems Simulation Manual S. Ahn/R. Bertini/J. Halkias/C. Leggett
- FHWA Programs & Activities J. Sturrock
- TFTC Subcommittee Reports
 - Joint Subcommittee on Traffic Simulation Models (AHB45(1) SimSub) M. Hadi
 - Crowd Flow Dynamics, Modeling and Management (AHB45(2)) M. Sarvi/S. Hoogendoorn
 - Connected Automated Vehicles (AHB45(3)) S. Hamdar
 - Research Problem Statements M. Hadi
 - Paper Review S. Ahn
 - Greenshields Prize & Awards L. Leclercq/S. Ahn
 - Mid-Year Meetings C. Buisson
 - Outreach and Diversity A. Talebpour
 - MFD Dataset J. Laval
- Liaison with other Committees All Attendees
- International Liaison International members and attendees
- Announcements and Future Meetings All Attendees
- New Business All Attendees



Review and Approve Minutes

- [January 9, 2017](#)
- [July 23, 2017](#)
- Thanks to Nikolas Geroliminis and Vikash Gayah for preparing the minutes!
- Thanks to Rob for making them available on our committee website!





Membership Update

- Currently 38 members
 - 25 members
 - 5 international
 - 4 young
 - 2 state DOT
 - 2 emeritus

 - Next membership rotation: 2019
-



TRB Report



-
- Robert Bertini
 - Rich Cunard



Transportation Systems Simulation Manual (TSSM)



- TSSM background
 - Task Force on System Simulations (AHB80T) Update
 - TSSM Status and Next Step
-



U.S. DOT/FHWA Report



- Jim Sturrock
 - ATDM/DMA Testbed
 - Traffic Analysis Tools Volume III Revision
 - Trajectory Validation Engine Project
 - Predictive Engine Project
-



Subcommittees

-
1. Joint Subcommittee on Traffic Simulation Models Hadi
 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
 3. Connected Automated Vehicles Hamdar
 4. Research Problem Statements Hadi
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 8. Outreach and Diversity Talebpour
 9. MFD Data Sets Laval
-



Subcommittees

-
- | | |
|---|-------------------|
| 1. Joint Subcommittee on Traffic Simulation Models | Hadi |
| 2. Crowd Flow Dynamics, Modeling and Management | Sarvi/Hoogendoorn |
| 3. Connected Automated Vehicles | Hamdar |
| 4. Research Problem Statements | Hadi |
| 5. Paper Review | Ahn |
| 6. Awards | Leclercq/Ahn |
| 7. Mid-Year Meetings | Ahn |
| 8. Outreach and Diversity | Talebpour |
| 9. MFD Data Sets | Laval |
-

Joint Traffic Simulation (SimSub) Subcommittee Report

Presented by

Mohammed Hadi, Ph.D., PE
Florida International University

Transportation System Simulation Manual Workshop
97th Transportation Research Board Annual Meeting

January 2018

Sunday Workshop

- Workshop Title: Data Driven Simulation to Support Decision Making in the 21st Century: Barriers and Potential Benefits
 - Data Driven Analysis Techniques in Reliability Space
 - Helping to Converge the Practice of Transportation System Simulation”
 - A Framework for Validating Traffic Simulation Models at the Vehicle Trajectory Level.
 - Data Plan for the NYC Connected Vehicle Pilot Deployment Evaluation
 - Guidelines for Designing Active Transportation and Demand Management (ATDM) Strategies Through Understanding Travelers' Motivations in Decision-making: Data Collection, Analysis and Modeling
 - Challenges to Simulating the Traffic and Energy Impacts of Connected and Automated Vehicle Systems
 - Data Inputs and Impacts to Connected and Automated Vehicle Modeling
 - Takeaways from ISTTT 22”

SimSub Activities and Discussions

- Best paper award
 - Theory: no paper selected
 - Application: Improving Scalability of Generic Online Calibration for Real-Time Dynamic Traffic Assignment Systems
- Life-time awards
- SimSub report – David Hale
- Potential SimSub and ITE SimCap collaboration
- Safety and pedestrian modeling task group
- Freight modeling
- Support of TSSM research
- Need for the Creation of a Microsimulation Information Repository


Potential SimSub and SimCap Joint Activities

- Safety modeling including ped conflict
- Pedestrian modeling – possible PTV presentation and/or task group or problem statements
- Product-specific guidance and information and meeting user community expectation by vendors (should we have a task group)
- CAV and reliability outreach activities to the community – how can we have a bridge between research and practice
- Lessons learned, value of good simulation, return on investment (task group, problem statement for NCHRP synthesis).
- Consistent and reliable data sources
- Ethical and credibility challenges, possibly certification challenges



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
 - 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn**
 3. Connected Automated Vehicles Hamdar
 4. Research Problem Statements Hadi
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 8. Outreach and Diversity Talebpour
 9. MFD Data Sets Laval
-

A blurred photograph of a crowd of people walking across a crosswalk at night. The image is intentionally out of focus to convey a sense of movement and density. The crosswalk has white stripes on a dark pavement. The background is dark, suggesting an urban environment at night.

Subcommittee Crowd Flow Dynamics, Modelling, and Management AHB45 (2)

Activity Report

(Serge Hoogendoorn, Majid Sarvi, Winnie Daamen)

Subcommittee's Activities in 2017-2018:

1) TRB special call for papers

16 papers received

→ Lectern session on Wednesday (2:30PM-4PM), session 847, CC101

2) Subcommittee meeting on Monday 6PM-7:30PM, Marriott, Ballroom Salon 6 (M2)

3) Workshop on Thursday, 8AM-12, CC101

4) New book (Monograph on crowd traffic flow theory)



Subcommittees

-
1. Joint Subcommittee on Traffic Simulation Models Hadi
 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
 - 3. Connected Automated Vehicles Hamdar**
 4. Research Problem Statements Hadi
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 8. Outreach and Diversity Talebpour
 9. MFD Data Sets Laval
-



Annual Report

AHB45(3) Subcommittee: Traffic Flow Modeling for Connected and Automated Vehicles



AHB45 Meeting
Washington, DC, USA
January, 2018



Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

Transportation Research Board Annual Meeting Events (7-11 January '18):

a. Call for Papers:

Connected Multi-Modal Transportation System Modeling & Simulation.

- 27 Papers Submitted (5 Lectern, 8 Poster, 4 Possible Considerations for Publication)
- 1 Lectern Session (Connected Multimodal Transportation System Modeling and Simulation - Wednesday 4:30 pm– 6:00 pm; Convention Center 101)

b. **Workshop** proposal (Sunday January 8, 2018, 1:30 pm – 4:30 pm):

Data Collection, Experiments and Instrumentation in Connected Multimodal Transportation Systems

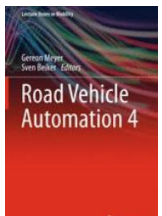
(Antonio Caamano/John Campbell, Zhingan Xu, Majid Sarvi, Alireza Talebpour, Dinesh Manocha, Victor Knoop/Winnie Daaman)





Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

- AVS 2017: Breakout Session # 14 Enhancing the Validity of Traffic Flow Models with Emerging Data
 - Speakers (Daniel Work, Jiaqi Ma, Rita Excell and Steve Shladover)
 - Report prepared (Michael Levin, Meng Wang, Xiaopeng Li, Steve Mattingly)
- Book Chapters:
 - 2016: Traffic Flow of Connected and Automated Vehicles: Challenges and Opportunities (Simeon Calvert, Hani Mahmassani, Jan-Niklas Meier, Pravin Varaiya, Samer Hamdar, Danjue Chen, Xiaopeng Li, Alireza Talebpour, Stephen P. Mattingly) Traffic Flow of Connected and
 - 2017 and 2018 Book Chapters





Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

AVS 2017 Breakout Session 14

Summary of Key Findings and Lessons Learned

- Data collection for a variety of vehicles is needed: researchers currently use simple models due to the difficulty and expense of obtaining real data → Companies are reluctant to make available their vehicles or even their ACC logic because it risks reverse engineering proprietary software through observation of powertrain commands.
- ACC minimum safe gaps for reverting to human control often seem quite low; human driver behavior modeling still essential: estimating the effects of AVs during the transitional period requires more accurate modeling of human driving.
- CACC systems differ from platooning systems in several ways. In platoons, the lead vehicle typically has a supervisory role for vehicles entering and leaving, whereas CACC string formation is more ad-hoc.
- Models should include vehicle dynamics and receipt and response to communications.
- Other types of AV applications, such as freight, are more economically driven. AVs are in consideration for railroads because of the reduction in cost. Part of the large infrastructure costs for freight transport should be directed towards modeling the traffic flow and economic impacts.
- Research models are unlikely to be implemented directly in car companies: lack of details for real-time applications and issues associated with implementation paradigms and proprietary software.
- Development of common testbeds and data is a large issue. Sharing data with other researchers requires considerable expense for documentation and support. Data confidentiality becomes an issue as well. Driver behavior, such as car following and lane changing, also varies by country → Initiative to be taken by AHB45(3) Subcommittee





Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

AVS 2017 Breakout Session # 14

Recommended Action Items

- Develop partnerships with companies developing AVs to test and collect data.
- Educate the public on mobile control. For example, drivers may become angry or frustrated at vehicles implementing speed harmonization if they do not understand the benefits to congestion.
- Allocate funding in AV tests for documenting and sharing data.
- Create a forum for sharing main lessons and ideas with AV manufacturers without getting lost in the details.





Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

2017 Traffic and Granular Flow Conference (TGF'17)

- a. ~90 attendees
- b. 116 papers submitted – 103 papers accepted originally for the first round
- c. 42 reviewers (including Scientific Committee) invited; 26 answered
- d. 36 poster presentations/67 lectern presentations/3 plenary presentations
- e. 14 lecterns sessions (**3 special sessions on Connected Systems**)
- f. 4 Poster Sessions and One Plenary Session
- g. Two tracks (Pedestrians/Bicycles VS Vehicles/Complex Systems)
- h. Around 40 manuscripts submitted for Proceedings --> 3 Special Issues





Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

Activities and Action Items:

- a. 3 Special Issue Collaborations (J of ITS, J of TTE, TR-C)
- b. AVS 2018 Discussions
- c. Possible expansion in mission/scope
- d. → Website and Data Hub (Committee Wide Initiative – Jorge Laval, Sue Ahn)



<https://tftcav.seas.gwu.edu/exchange-portal/>

- e. Further Outreach (Outreach and Diversity Subcommittee)

Data Hub

This section provides links and information on some publicly available data associated with traffic flow theory and connected and automated transportation systems. As the data resources grow, the subcommittee will classify the data by type and continue facilitating the communication between the data providers and the data users. It should be noted that the subcommittee is not endorsing any data posted or the researchers posting such data. However, the subcommittee will assist both data providers and users in improving the corresponding data if needed.

1 Instrumented Probe Vehicle Data, Ohio State University

Two hours of instrumented probe vehicle data are available. These data were prepared as part of "Collecting Ambient Vehicle Trajectories from an Instrumented Probe Vehicle- High Quality Data for Microscopic Traffic Flow Studies". The data set was collected on an urban freeway during a typical evening commute. It includes the probe vehicle's trajectory, ambient vehicle trajectories, roadway geometry information, and validation video files. All of the trajectories were manually validated to ensure the quality for microscopic studies.

The data may be accessed through the following link:
<http://www.ece.osu.edu/~colfman/documents/DataSets>

For additional information, please contact Dr. Benjamin Colfman at Colfman.1@OSU.edu.



2 Analysis, Modeling, Simulation (AMS) and Filtered Trajectory Data, Research Data Exchange Portal, US Department of Transportation (USDOT)

Multiple data sets – ranging from speed profile data, travel time data and filtered trajectory data – are available through the USDOT Research Exchange portal (RDE). The data are mainly classified as: Dallas AMS Testbed, AMS San Mateo Testbed, Intelligent Network Flow Optimization Simulation (INFLO SIM), and Next Generation Simulation (NGSIM) filtered freeway I-80 trajectory data through the efforts of Dr. Vincenzo Punzo.

The data sets may be found through the link below:
<https://www.its-rde.net/>



3 MOCOPO (Measuring and Modeling Traffic Congestion and Pollution) Project, The French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR)

The MocoPo (Measuring and Modeling Traffic Congestion and Pollution) project is collected pollution data in 4 locations (3 near a congested urban freeway of 2x2 lanes and one inside the city to have the background pollution level) during 4 periods of 15 days (one period per season). The very short time collection period (15 minutes) permits to make detailed analysis. It also collected global traffic data and trajectories. The global data along with a catalog of some individual trajectories are available on the web site. Regarding the trajectory dataset, the project team members are currently enhancing our automatic video processing. They look forward to build an international team to go further and contribute in a distributed manner to enhance our unique trajectory data set.

The data is available through the following link:
<http://mocoipo.ifsttar.fr/>

For further information, please do not hesitate contacting Dr. Christine Buisson at christine.buisson@ifsttar.fr.



Join US in our Meeting – 6:00 PM-7:30 PM, Marriott Marquis, Marquis Ballroom Salon 9



Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

- Special Thanks to AHB45(3) Committee/Volunteers:
 - Xiaopeng (Shaw) Li
 - Haizhong Wang
 - Sue Ahn
 - Robert L. Bertini
 - Mark Brackstone
 - Danjue Chen
 - Samer Hamdar
 - Steve Mattingly
 - Michael Levin
 - Alireza Talebpour
 - Meng Wang
 - Alexander Skabardonis





Subcommittees

-
1. Joint Subcommittee on Traffic Simulation Models Hadi
 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
 3. Connected Automated Vehicles Hamdar
 - 4. Research Problem Statements Hadi**
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 8. Outreach and Diversity Talebpour
 9. MFD Data Sets Laval
-



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
3. Connected Automated Vehicles Hamdar
4. Research Problem Statements Hadi
- 5. Paper Review Ahn**
6. Awards Leclercq/Ahn
7. Mid-Year Meetings Ahn
8. Outreach and Diversity Talebpour
9. MFD Data Sets Laval



Paper Review & Sessions

Many thanks to subcommittee members, authors and reviewers!



1345 papers since 2009



Special Calls for Papers

- Crowd dynamics: empirical analyses, modeling, simulation and management
 - Organizers: Majid Sarvi, Serge Hoogendoorn, Winnie Daamen,
 - 14 papers received
 - 1 podium session

- Advances in modeling and traffic management for large-scale urban networks
 - Organizers: Nikolas Geroliminis, Nicolas Chiabaut, Jack Haddad, Mehdi Keyvan Ekbatani, Victor Knoop, Jorge Laval, Ludovic Leclercq, Monica Menendez, Mohsen Ramezani, Meaad Saberi, Ali Zockaie,
 - 24 papers received
 - 1 podium session



Special Calls for Papers

- Connected multi-modal transportation system modeling & simulation
 - Organizers: Lead by AHB 45(3), Samer Hamdar, Robert Bertini, Soyoung Ahn, Mohammed Hadi
 - 27 papers received
 - 1 podium session

 - Multimodal system analysis and modeling
 - Organizers: Monica Menendez, Nicolas Chiabaut, Vikash Gayah, Ilgin Guler, Eric Gonzales, Eleni Christofa, Weihua Gu
 - 14 papers received

 - **Special Calls for 2019 Due in May 2018**
 - Topics?
-



Paper Review Statistics

Annual Meeting	2018	2017	2016	2015	2014	2013	2012	2011
Papers Received	194	207	173	201	195	172	177	119
Percent increase	-6%	20%	-14%	4%	13%	-3%	49%	18%
Presentation only	64	67	54	48	32	27	32	22
Publication only	4	1	2	4	3	5	5	1
Present and publish	126	139	117	149	160	140	140	96
Submitted Presentation	190	206	171	197	192	167	172	118
Lectern Sessions	5	6	6	6	5	6	5	4
Lectern Papers	25	30	31	27	23	30	25	20
Poster Sessions	4	4	3	2	2	3 (+1)	4	2
Poster Papers	84	84	71	80	84	69 (+6)	67	60
Subtotal	109	114	102	107	107	99	92	80
Percent Accepted	57%	55%	60%	54%	56%	59%	53%	67%
Rejected	81	92	70	90	85	68	80	38



Paper Review Statistics



Annual Meeting	2018	2017	2016	2015	2014	2013	2012	2011
Submitted Publication	129	140	119	152	163	145	145	97
Accepted (1st round)	0	0	0	0	1	0	0	2
Revise and Re-review	34	35	29	42	44	53	44	35
To Be Determined	0	0	7	5	4	3	0	0
Subtotal	34	35	36	47	49	56	44	37
Publication Slots	25	28	~24	~30	35	33	36	30
Accepted (Final)	IP	23	24					
Target Acceptance Rate	20%	20%	20%	20%	22%	23%	25%	31%
Actual Acceptance Rate	IP	16%	20%					
Rejected	95	105	81	105	95	89	109	49



Paper Review Statistics



Annual Meeting	2018	2017	2016	2015	2014	2013	2012	2011
Reviews								
Assigned	1100	824	902	804	811	750	712	568
Assigned/paper	5.7	4.0	5.2	4	4.2	4.4	4	4.8
Received	671	724	605	720	695	634	597	481
Received/paper	3.5	3.5	3.5	3.6	3.6	3.7	3.4	4
Response rate	61%	88%	67%	90%	86%	85%	84%	85%
TFT Reviewer Pool	611	591	563	526	476	433	440	310+
Number of Reviews	0-27	0-28	0-45	0-38	0-36	0-33	1-32	
Average	3.5	4	5	4.7	5.5	5.5	5.3	
Total Reviews	2104	2372	2135	2469	2622	2368	2330	



Review Timeline

Dates	Process	Review Outcome
Aug 1	Papers due	
Aug 20	Assign reviews	
Sep 15	Reviews due	
Sep 30 – Oct 15	1st round decision	Accept, RR (major revision, minor revision), Reject
Nov 15	Revised papers due	
Dec 1 - Dec 15	2nd round decision	Accept ('minor revision' papers), Re-review, Reject
Jan 31	Final decision	Accept within the quota (20%), Reject



Accepted Papers

Paper Number	Paper Title	DOI	Corresponding Author	All Authors	Corresponding Author Email	Volume Number	Sequence
18-01408	OPTIMIZING TRANSIT SIGNAL PRIORITY IMPLEMENTATION ALONG AN ARTERIAL		S. Ilgin Guler	Kan Wu, S. Ilgin Guler	iguler@engr.psu.edu		
18-00020	Paper for AHB45- Committee on Traffic Flow Theory and Characteristics- Resurrecting the Lost Vehicle Trajectories of Treiterer and Myers		Benjamin Coifman	Benjamin Coifman, Lizhe Li, Wen Xiao	coifman.1@osu.edu		
18-00597	INVESTIGATING TRANSFER FLOW BETWEEN URBAN NETWORKS BASED ON THE MACROSCOPIC FUNDAMENTAL DIAGRAM		Hwasoo Yeo	Sunghoon Kim, Sehyun Tak, Hwasoo Yeo	hwasoo@kaist.ac.kr		
18-03527	Multi-thread Optimization for the Calibration of Microscopic Traffic Simulation Model		Joyoung Lee	Zenghao Hou, Joyoung Lee	jo.y.lee@njit.edu		



Transportation Research Board AHB45 Committee on Traffic Flow Theory and Characteristics

- Home
- Members
- Friends
- Meetings**
- Documents
- Links
- Contact
- Newsletters

Committee Meetings

2018 Activities

97th Annual Meeting of the Transportation Research Board January 2018

- Committee Meeting Agenda: [pdf](#)
- Chair Letter: pdf
- Meeting Presentation Materials: pdf
- Committee Meeting Minutes: pdf
- **Papers Recommended for Publication**

2018 Summer Meeting Woods Hole

- Summer Meeting Agenda: pdf
- Summer Meeting Minutes: pdf
- Summer Meeting Attendance: pdf

2017 Activities

96th Annual Meeting of the Transportation Research Board January 2017





Best Reviewer Award

- Inaugural Best Reviewer Award

Christine Buisson



Congratulations!!!



Chair Letter



January 4, 2018



Dear members and friends of the TRB Committee on Traffic Flow Theory and Characteristics (AHB45):

We hope you will join us at the upcoming TRB Annual Meeting in Washington, DC January 7-11, 2018 (for details, please use the [TRB interactive program](#) and enter "AHB45" to find our events):

1. **Committee Meeting:** All members and friends are welcome at our committee business meeting, Monday, January 8, 2018 1:30 PM-5:30 PM, Marriott Marquis, Marquis Ballroom Salon 9.
Draft Agenda: *Please review the agenda and let me know if you have anything to add or modify.*
2. **SimSub Meeting** AHB45(1): Please support the efforts of the Joint Subcommittee on Simulation by participating in our meeting on Monday 7:30 PM-9:30 PM Marriott Marquis, Marquis Ballroom Salon 10.
3. **Crowd Flow Dynamics, Modeling and Management Subcommittee Meeting** AHB45(2): The crowd/ped subcommittee will be meeting on Monday 6:00 PM-7:30 PM, Marriott Marquis, Marquis Ballroom Salon 6.
4. **Traffic Flow Modeling for Connected and Automated Vehicles** AHB45(3): The CAV subcommittee will be meeting on Tuesday 6:00 PM-7:30 PM, Marriott Marquis, Marquis Ballroom Salon 9.
5. **Task Force on System Simulation** AHB80T: Tuesday 8:00 AM- 12:00 PM, Marriott Marquis, Shaw (By invitation).
6. **Workshops:** This year we are sponsoring or co-sponsoring three workshops and one doctoral student workshop:
 1. **Workshop 130 Data-Driven Simulation to Support Decision Making in the 21st Century: Barriers and Potential Benefits:** Sunday 9:00 AM-12:00 PM, Convention Center, 101. Join us for the annual workshop sponsored by SimSub and get there early since there will be a big crowd.
 2. **Workshop 176 Data Collection, Experiments, and Instrumentation in Connected Multimodal Transportation Systems:** Sunday 1:30 PM-4:30 PM, Convention Center, 101. Join us for the annual CAV subcommittee workshop and support our young subcommittee.
 3. **Workshop 880 ITS for Crowd Management: Recent Advances in Data and Models:** Thursday 8:00 AM-12:00PM, Convention Center, 101. Join us for the new workshop hosted by Crowd subcommittee.
 4. **Doctoral Student Workshop 195 Transportation Modeling:** Sunday 1:30 PM-5:00 PM, Convention Center, 146B.
7. **Lectern Sessions:** We have five lectern sessions this year:
 1. **221 Macroscopic Modeling for Traffic Estimation and Control:** Monday 8:00-9:45 AM, Convention Center, 101
 2. **283 Microscopic Vehicle-Level Modeling:** Monday 10:15-12:00 PM, Convention Center, 101
 3. **687 Advancing Theory and Application of Large-Scale Urban Traffic Network Models:** Tuesday 3:45-5:30 PM, Convention Center, 102A
 4. **847 Crowd and Pedestrian Dynamics: Empirical Analyses, Modeling, Simulation, and Management:** Wednesday 2:30-4:00 PM, Convention Center, 101
 5. **869 Connected Multimodal Transportation System Modeling and Simulation:** Wednesday 4:30 - 6:00 PM, Convention Center, 101
8. **Poster Sessions:** We are sponsoring three poster sessions—please attend and meet the authors:
 1. **522 Traffic Flow Theory and Characteristics, Part 1:** Tuesday 8:00-9:45 AM, Convention Center, Hall E
 2. **573 Traffic Flow Theory and Characteristics, Part 2:** Tuesday 10:15-12:00 PM, Convention Center, Hall E
 3. **775 Traffic Flow Theory and Characteristics, Part 3:** Wednesday 8:00-9:45 AM, Convention Center, Hall E
 4. **832 Traffic Flow Theory and Characteristics, Part 4:** Wednesday 10:15-12:00 PM, Convention Center, Hall E

Visit our website <http://tft.eng.usf.edu/>, and "Like" us on Facebook: <https://www.facebook.com/AHB45/likes>

Special thanks to all paper reviews, call-for-papers organizers, paper review coordinators, subcommittee chairs, members and friends for the incredible job in putting this meeting together. Please feel free to [contact me](#) if you have any suggestions or questions. I look forward to seeing you in Washington, best wishes,

Soyoung (Sue) Ahn, University of Wisconsin-Madison
Chair, TRB Committee on Traffic Flow Theory and Characteristics



Workshops

6. **Workshops:** This year we are sponsoring or co-sponsoring three workshops and one doctoral student workshop:
 1. **Workshop 130** [Data-Driven Simulation to Support Decision Making in the 21st Century: Barriers and Potential Benefits](#): Sunday 9:00 AM-12:00 PM, Convention Center, 101. Join us for the annual workshop sponsored by SimSub and get there early since there will be a big crowd.
 2. **Workshop 176** [Data Collection, Experiments, and Instrumentation in Connected Multimodal Transportation Systems](#): Sunday 1:30 PM-4:30 PM, Convention Center, 101. Join us for the annual CAV subcommittee workshop and support our young subcommittee.
 3. **Workshop 880** [ITS for Crowd Management: Recent Advances in Data and Models](#): Thursday 8:00 AM-12:00PM, Convention Center, 101. Join us for the new workshop hosted by Crowd subcommittee.
 4. **Doctoral Student Workshop 195** [Transportation Modeling](#): Sunday 1:30 PM-5:00 PM, Convention Center, 146B.



Sessions

7. **Lectern Sessions:** We have five lectern sessions this year:

1. **221** [Macroscopic Modeling for Traffic Estimation and Control](#): Monday 8:00-9:45 AM, Convention Center, 101
2. **283** [Microscopic Vehicle-Level Modeling](#): Monday 10:15-12:00 PM, Convention Center, 101
3. **687** [Advancing Theory and Application of Large-Scale Urban Traffic Network Models](#): Tuesday 3:45-5:30 PM, Convention Center, 102A
4. **847** [Crowd and Pedestrian Dynamics: Empirical Analyses, Modeling, Simulation, and Management](#): Wednesday 2:30-4:00 PM, Convention Center, 101
5. **869** [Connected Multimodal Transportation System Modeling and Simulation](#): Wednesday 4:30 - 6:00 PM, Convention Center, 101

8. **Poster Sessions:** We are sponsoring three poster sessions—please attend and meet the authors:

1. **522** [Traffic Flow Theory and Characteristics, Part 1](#): Tuesday 8:00-9:45 AM, Convention Center, Hall E
2. **573** [Traffic Flow Theory and Characteristics, Part 2](#): Tuesday 10:15-12:00 PM, Convention Center, Hall E
3. **775** [Traffic Flow Theory and Characteristics, Part 3](#): Wednesday 8:00-9:45 AM, Convention Center, Hall E
4. **832** [Traffic Flow Theory and Characteristics, Part 4](#): Wednesday 10:15-12:00 PM, Convention Center, Hall E



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
3. Connected Automated Vehicles Hamdar
4. Research Problem Statements Hadi
5. Paper Review Ahn
- 6. Awards Leclercq/Ahn**
7. Mid-Year Meetings Ahn
8. Outreach and Diversity Talebpour
9. MFD Data Sets Laval
10. Publication Impact Factors Geroliminis/Gayah
11. Special Report on Traffic Flow Theory Mahmassani



D. Grant Mickle Award

D. Grant Mickle Award

- Established 1976
- Outstanding paper published in the field of operation, safety, and maintenance of transportation facilities.
- Honors fifth executive director, later 33rd Executive Committee Chair

A paper from the TFT committee received the award the two last years !

Paper 17-00884: Gayah, V. et al.

Improving Street Network Efficiency by Dynamically Prohibiting Left Turns at Signalized Intersections.



Fred Burggraf Award

Fred Burggraf Award

- Established 1966
- Stimulate and encourage young researchers
- Recognition of excellence in transportation research by researchers 35 years of age or younger whose papers have been published under the sponsorship of any Division A Standing Group
- Accompanied by a cash prize
- Honors TRB director from 1951-1964

A paper from the TFT committee wins this prize last year !

Paper 17-00887. Ilgin et al.

Estimating the Impacts of Bus Stops on Transit Signal Priority on Intersection Operations: A Queueing and Variational Theory Approach,



Cunard Award for 2017

2017 Best 1st Young Author Paper in the area of Operations:

■ *????*



- 2016: Car-following and lane-changing behavior involving heavy vehicles; Chen, D., Ahn, S., Bang, S., Noyce, D., University of Wisconsin-Madison
- 2015: On Traffic Relaxation, Anticipation and Hysteresis; Hui Deng, University of California, Davis ; H. Michael Zhang, University of California, Davis
- 2014: Clustering Approach to Assess Travel Time Variability of Arterials, Hans, E., Chiabaut, N., Leclercq, L., Univ. Lyon
- 2013: Inhomogeneous Flow Patterns in Undersaturated Road Networks and Implications for Macroscopic Fundamental Diagram; Jean C. Doig Godier, University of California, Berkeley; Vikash V. Gayah Pennsylvania State University ; Michael J. Cassidy, University of California, Berkeley



Greenshields Prize

Greenshields Prize for 2017

17-06081 Traffic State Estimation for Urban Road Networks Using A Link Queue Model. *By Gu, Y.⁽¹⁾, Qian, Z. ⁽¹⁾, Zhang, G.⁽²⁾,
(1) Carnegie Mellon University; (2) University of Hawaii at Manoa*

This paper deals with the derivation of analytical formulae to estimate the effective capacity at freeway merges in a multilane context. Effective capacity means the capacity observed when the merge happens to be the head of the congestion. It extends two previous papers that are based on the same modeling framework but that are restricted to a single lane on the freeway (or to the analysis of the right lane only). The analytical expression for the one-lane capacity is recursively applied for all lanes. Lane-changing maneuvers (mandatory for the on-ramp vehicles and discretionary for others) are divided into two non-overlapping local merging areas. Usually, estimating the effective capacity at freeway merges requires a traffic simulator and multiple runs. Here, the analytical formulae provide a first estimation considering most of the important parameters related both to road design (e.g. length of the inserting length, number of lanes), and the traffic composition (e.g. truck proportion, vehicle acceleration capabilities). A sensitivity analysis shows that vehicle acceleration and the truck ratio are the most influential parameters for the total capacity. The analytical formulae are proven to provide very good estimates when compared to experimental data for an active merge on the M6 freeway in UK.





Best Paper on Traffic Flow Theory

- New award from the TFT committee this year.
- May not be awarded every year.

17-06294: A Framework for Deriving Macroscopic Demand Functions from Microscopic Acceleration Models by Srivastava, A. & Jin, W. from University of California, Irvine



Some insights

- Please mention your status (Msc., PhD student,...) on the front page ! Also mention if the paper is eligible for the Burggraf award !
- Lots of papers submitted for publication in TRR have a young author as first author
- Only two paper seems eligible to the Burggraf award (hard to check in practice)
- Award subcommittee maintenance: Nathan Gartner is doing his last year as a member, Ludovic Leclercq is doing is last year as the chair (will be replaced by Monica Menendez), Jiwon Kim has being appointed as a new member starting from this year.

We are currently working on the 2017 award season !
The 2017 Greenshields prize will be announced during TFT summer meeting !



Awards

- Award Committee
 - Chair: Ludovic Leclercq
 - Monica Menendez
 - Robert Bertini
 - Nathan Gartner



Award Subcommittee Chair



- Thank you Ludovic!
 - 2010-2018



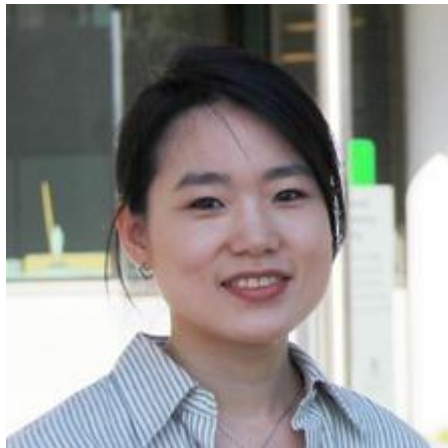
- Welcome Monica!
 - Effective 2018
-



Award Subcommittee Member



- Thank you Nathan!
 - 2010-2018



- Welcome Jiwon
 - Effective 2018
-



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
3. Connected Automated Vehicles Hamdar
4. Research Problem Statements Hadi
5. Paper Review Ahn
6. Awards Leclercq/Ahn
- 7. Mid-Year Meetings Ahn**
8. Outreach and Diversity Talebpour
9. MFD Data Sets Laval
10. Publication Impact Factors Geroliminis/Gayah
11. Special Report on Traffic Flow Theory Mahmassani



Mid-Year Meetings

- 2007 ISTTT London, UK (in pub)
- 2008 Greenshields Symposium, Woods Hole, Massachusetts
- 2009 ISTTT Hong Kong, China (lunch table)
- 2010 Does Traffic Data Support Traffic Models? Annecy, France
- 2011 ISTTT Berkeley (one hour w/SimSub)
- 2012 Joint Summer Meeting with HCQS Committee, Fort Lauderdale, Florida
- 2013 ISTTT, Noordwijk, the Netherlands
- 2014 Portland, Oregon, USA, Symposium Celebrating 50 Years of Traffic Flow Theory
- 2015 ISTTT Kobe, Japan
- 2016 Sydney, Australia
- 2017 ISTTT Chicago
- 2018 Woods Hole, Massachusetts
- 2019 ISTTT Lausanne, Switzerland
- 2020 TBD (Ideas?)

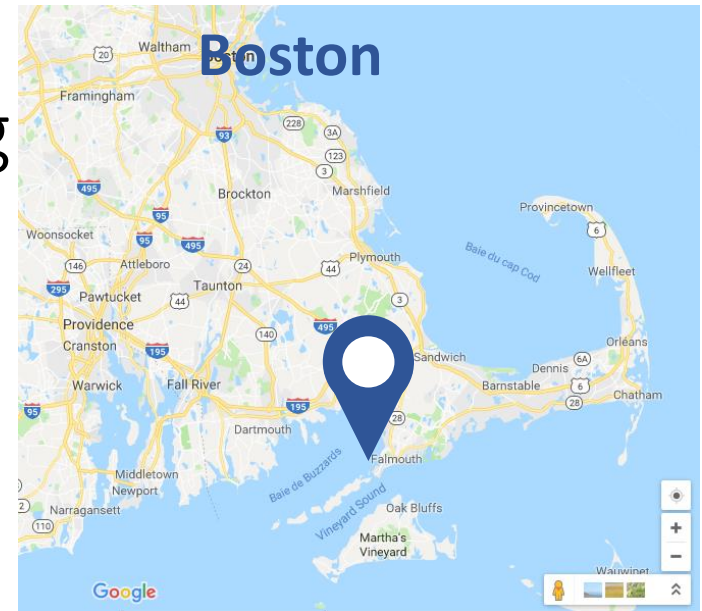


Mid-Year Meetings

- 2018 Midyear Meeting: August 7-9, 2018, Woods Hole, Massachusetts, USA
 - Simulation Manual Task Force Retreat: August 10, 2018?
-

2018 TFTC mid-year meeting

- Dates: Tues. 7 to Thur. 9 August (2018)
- Location: Woods Hole (MA)
120 km / 1h30 from Boston.
<http://www.nationalacademies.org/Woodshole/index.htm>



2018 TFTC mid-year meeting topic and format

“Overcoming the current limitations of our traffic models”

- Lectern sessions:
 - Extended abstract (up to 6 pages) will be reviewed before 1st of July.
 - If desired, a complete paper can then be submitted **a special TR-C issue**.
- A classic paper retreat is planned.
 - A list of classic papers will be provided (please contribute to this list).
 - Ideally a set of 3-4 of them would be selected by PhD/ post docs and the presentation would comprise the presentation of the initial paper, the description of its posterity, and the current research questions that are related to this paper.

Topic of the CfP for the MYM

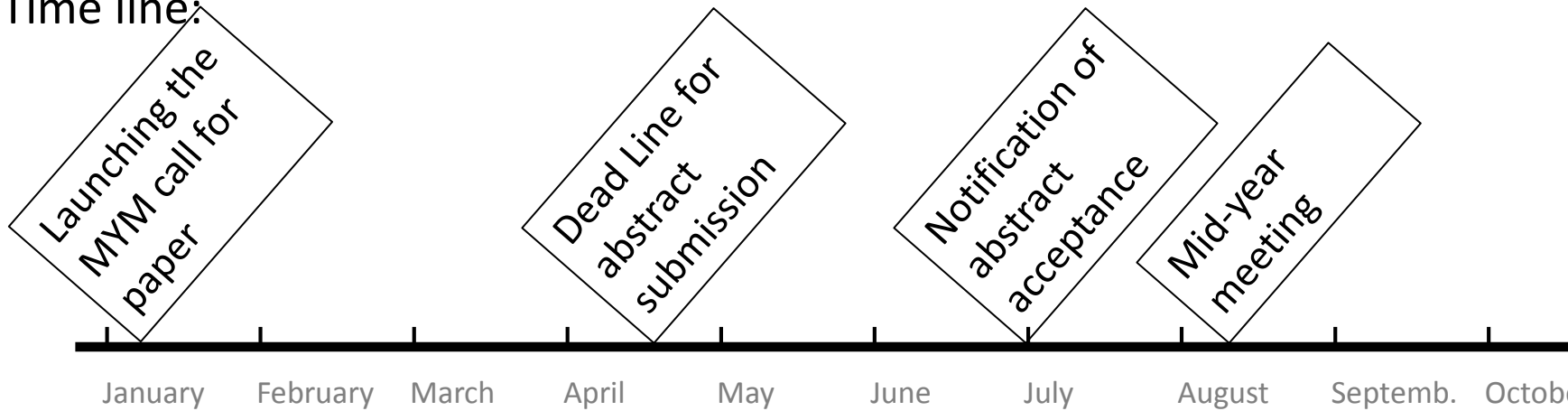
- The TRB TFTC committee invites every paper aiming to identify the current and numerous limitations of traffic models and proposing some ways of overcoming those limitations. We welcome papers:
 - Identifying the current lacks of the available models and proposing improvements;
 - Confronting data analysis and traffic models at all scales from micro (vehicular trajectories) up to the network (MFD-NFD based models);
 - Proposing ways to extend models beyond their current main scope: vehicular traffic, to encompass other modes sharing road space and new types of vehicles (connected and automated vehicles).
 - More to be added?

2018 TFTC MYM organizing committee

- Sue Ahn
- Danjue Chen
- Wei long Jin
- Vikash Gayah
- Eric Gonzales
- Ilgin Guler
- Daiheng Ni
- Haizhong Wang
- Peter.Wagner
- Winnie Daamen
- Costas Antoniou
- Vincenzo. Punzo
- Zuduo Zheng
- Mehdi Ekbatani
- Christine Buisson

2018 TFTC mid-year meeting (MYM)

- Time line:



TR-C special issue topic

- To be expanded from the mid-year meeting call.

TR-C special issue

- Proposed time line:
 - Submission website opens: February 1, 2018
 - Submission of full paper due: October 1, 2018
 - Feedback from first-round reviews: December 1, 2018
 - Return of revised manuscripts: February 1, 2019
 - Feedback from second-round reviews (if needed): March 15, 2019
 - Final manuscripts due: April 15, 2019
 - Final decision: May 15, 2019.
- Who should submit? Open to all. But those who present their abstract during the MYM will benefit of fruitful discussions.



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
 3. Connected Automated Vehicles Hamdar
 4. Research Problem Statements Hadi
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 - 8. Outreach and Diversity Talebpour**
 9. MFD Data Sets Laval
-



Reports

Outreach and Diversity Subcommittee

AHB45 Meeting
Washington DC, USA
January, 2017



Outreach and Diversity Subcommittee

- Continuation of Activities Through a Transition Period:
 - Transition Period: **Alireza Talebpour** taking the lead
 - Newsletter (<http://tftcnews.blogspot.com/>): 6 issues with each issue corresponding to two months
 - YouTube Channel (<https://www.youtube.com/user/AHB45/feed>) (Alireza Talebpour)
 - 8 interviews
 - Facebook Page (Meead Sabri: <https://www.facebook.com/AHB45>)
 - ISTTT 22 Webinar to Start Soon (Jorge Laval as Host)
-



Outreach and Diversity Subcommittee

- Special Thanks to:
 - Alireza Talebpour
 - Justin Schorr
 - Meead Saberi
 - Xiaopeng Li
 - Robert Bertini
 - Sue Ahn
 - Jorge Laval(All TFT website/facebook page/newsletter/webinar contributors and readers)

Transportation Research Board
Traffic Flow Theory and Characteristics
Committee—AHB 45

Newsletter

EVENTS/ANNOUNCEMENTS

2018

Transportation Research Board, 2018— AHB45 Workshops, Meetings and Sessions

The 97th Transportation Research Board (TRB) Annual Meeting will be held in Washington DC, USA, between the 7th and the 11th of January of 2018. The TRB Committee on Traffic Flow Theory and Characteristics (AHB45) is sponsoring four workshops:

[Workshop 1:](#) Data-Driven Simulation to Support Decision Making in the 21st Century: Barriers and Potential Benefits (Sunday, January 07, 2018, 9:00 AM - 12:00 PM) (Workshop 130, Convention Center 101)

[Workshop 2:](#) Data Collection, Experiments, and Instrumentation in Connected Multimodal Transportation Systems (Sunday, January 07, 2018, 1:30 PM - 4:30 PM) (Workshop 176, Convention Center 101)

[Workshop 3:](#) ITS for Crowd Management: Recent Advances in Data and Models (Thursday, January 11, 2018, 8:00 AM - 12:00 PM) (Workshop 880, Convention Center 101).

[Workshop 4:](#) Doctoral Student Workshop on Transportation Modeling (Sunday, January 07, 2018, 1:30 PM—5:00 PM) (Workshop 195, Convention Center 146B).



Volume 5, Issue 10-11-12
October-November-December 2017

Newsletter Spotlight

TRB 2018 — AHB45 Events

TGF17 — Proceedings and Special Issues

New Set of Extracted Trajectory Data

TR-C Special Issue

Positions: PhD Positions—George Washington University

Traffic in the Media: “Nissan Develops Car That Will Read Brain Waves”

Congratulations: Penn State University Transportation Research Team—D. Grant Mickle Award and Fred Burggraf Award



Committee Website

- <http://tft.eng.usf.edu/>
- Anyone can contribute items
- Revised 2001 Monograph
- 1964 and 1975 Monographs
- Greenshields Symposium 2008 *TR Circular*
- Symposium Pages
- Greenshields Prize page
- Historic Papers
- Meeting Materials
- **Volunteer?**

1/5/2016

Committee on Traffic Flow Theory and Characteristics



Transportation Research Board AHB45

Committee on Traffic Flow Theory and Characteristics

Home
Members
Friends
Meetings
Documents
Links
Contact
Newsletters



Operations Section

Welcome to the home page of the TRB Committee on Traffic Flow Theory and Characteristics. This volunteer TRB committee is concerned with the development, validation, and dissemination of theoretical, experimental, and applied research on traffic flow theory and traffic flow characteristics and the determination of the relationship of traffic flow theory and traffic flow characteristics to the planning, design and operation of transportation systems.

Subcommittees

[Joint Simulation Subcommittee \(SimSub\)](#)

We jointly sponsor the TRB Joint Simulation Subcommittee AHB45(1), chaired by George List (North Carolina State University). SimSub is the focal point for coordinating advancements in traffic simulation which crosses multiple committee boundaries. You can volunteer in one of SimSub's task groups: Annual Workshop; Liaison and Outreach; Newsletter; Research Needs and Resources; Simulation Calibration; Verification and Validation; Mesoscopic Simulation; Safety Modeling and Simulation; or Agent-Based Simulation.

[Crowd Flow Dynamics, Modeling and Management Subcommittee](#)

Consider getting involved in this subcommittee (AHB45(2)), which is chaired by Serge Hoogendoorn (TU Delft) and Majid Sarvi (Monash University). Follow our Facebook page, and join us for our annual workshop and committee meeting in January at the TRB Annual Meeting.

TRB Publications: Since 1963 the Committee on Traffic Flow Theory & Characteristics has contributed [619 papers](#) to [66 issues](#) of the Transportation Research Record (previously Highway Research Record). These papers have been cited more than 13,000 times according to [Google Scholar](#) (thanks to E. Xuan). We invite your [comments](#) on these papers—how have they influenced research or practice? Do you cite them? The International Symposium on Traffic and Transportation Theory (ISTTT) has produced 645 papers since 1959, that have been cited more than 14,000 times according to [Google Scholar](#) (thanks to V. Gayeh).

Free Traffic Flow Webinars: Since 2010 we have hosted more than 40 free Traffic Flow Theory and Characteristics Webinars. From 2010–2011, this was done in partnership with the TrafficLab at Georgia Tech. You can join the [Traffic Flow Webinar Google Group](#) to make sure you are notified and also be sure to follow us on [Facebook](#). If you have a topic to suggest or you would like to present a webinar, please contact us.

2016 TRB Annual Meeting: Click [here](#) for a quick summary of our meetings, sessions, and workshops that will be held during the TRB Annual Meeting, January 10–14, 2016 in Washington, D.C.

2016 Summer Meeting and Symposium on Innovations in Traffic Flow Theory and Characteristics in the Era of Automated Vehicles, Big Data and the Internet of Things, July 2–3, 2016, Sydney, Australia

2014 Summer Meeting and Symposium Celebrating 50 Years of Traffic Flow Theory: Proceedings from our 2014 Symposium in Portland, Oregon are available.

Greenshields Prize: The 2015 Greenshields Prize will be presented at the TRB Annual Meeting in January 2016.

ISTTT 22: The 22nd International Symposium on Transportation and Traffic Theory will be held at Northwestern University from July 24–26, 2017. We will also hold a short summer meeting at the Symposium.

We look forward to your active participation and involvement with this committee. Very sincerely yours,



Subcommittees

1. Joint Subcommittee on Traffic Simulation Models Hadi
 2. Crowd Flow Dynamics, Modeling and Management Sarvi/Hoogendoorn
 3. Connected Automated Vehicles Hamdar
 4. Research Problem Statements Hadi
 5. Paper Review Ahn
 6. Awards Leclercq/Ahn
 7. Mid-Year Meetings Ahn
 8. Outreach and Diversity Talebpour
 - 9. MFD Data Sets Laval**
-



MFD Data Sets

- <https://sites.google.com/a/jltraffic.com/mfd-dataquest/home>



Liaison with Other Committees

- Highway Capacity Quality of Service Committee (AHB40)
J. Sturrock/M. Hadi
 - Task Force on System Simulations (AHB80T)
R. Bertini/J. Sturrock/R. Cunnard
 - Young Members Council
E. Gonzales
-

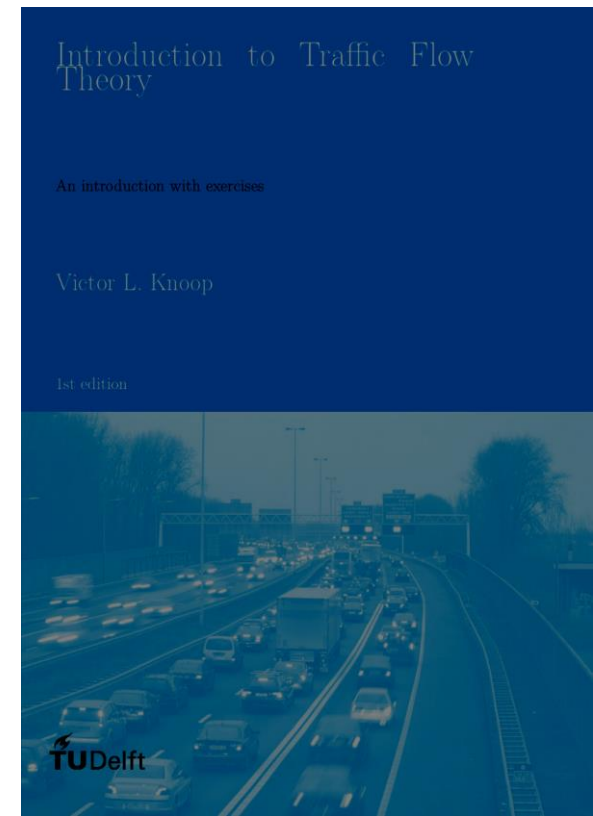


International Liaison

- Massively Multiplayer Simulation Game Environment
 - L. Leclercq
 - “Introduction to Traffic Flow Theory” by Victor Knoop
-

Traffic flow theory book

- Free to download
- http://victorknoop.eu/research/book/Knoop_Intro_traffic_flow_theory_edition1_cover.pdf
- Including ~250 questions





Announcements and Future Meetings



- AVS18 San Francisco, July 9-12, 2018
 - S. Hamdar
 - Propose workshop? Break-out session?

 - TFTC Midyear Meeting, August 7-9, 2018

 - 2nd Symposium on Management of Future Motorway and Urban Traffic Systems (MFTS2018)
 - V. Punzo / M. Makridis

 - ISTTT23 Lausanne, Switzerland, July 24-26, 2019
 - N. Geroliminis / L. Leclercq
-

Conference

- IX workshop on mathematical foundations of traffic
- *Mathematics Applied to Traffic and Transport Systems (MATTS)*
- Amsterdam, 13-15 June 2018 (tentative)
- Abstract due mid February



New Business

- 2019 Annual Meeting Call for Papers (Due in May)
 - 2019 Workshop Proposals (Due in June)
-



Adjourn



Please don't forget to sign in!
