Welcome to AHB45 Committee on Traffic Flow Theory and Characteristics

January 19, 2017

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. Cunard/R. Bertini
FHWA Programs & Activities	J. Sturrock
TFTC Subcommittee Reports	
SimSub (AHB45(1))	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
Awards	S. Ahn/L. Leclercq
Mid-Year Meetings	S. Ahn/Attendees
Outreach and Diversity	S. Hamdar
MFD Dataset	J. Laval/L. Leclercq
Publication Impact Factors	N. Geroliminis/V. Gayah
Special Report on Traffic Flow Theory	H. Mahmassani
Liaison with other Committees	All Attendees
International Liaison	Members and attendees
Announcements and Future Meetings	All Attendees
New Business	All Attendees

Review and Approve Minutes

- January 13, 2016
- July 2, 2016
- Thanks to Ludovic Leclercq for hosting the meeting in Sydney and preparing the minutes!
- Thanks to Danjue Chen for preparing the minutes for the Committee meeting in January!
- Thanks to Rob for making them available on our committee website!

Membership Update: CAV Sub

- Thank you Stephen!
  - 2015-2016

- Welcome Samer Hamdar – New CAV Sub Chair effective 4/15/16

Membership Update

- Membership rotation (every three years)
  - 9 members to be rotated off
    - Koohong Chung
    - George List
    - Michael Mahut
    - Stephen Mattingly
    - Yu Nie
    - Robert Sheehan
    - Avinash Unnikrishnan
    - Peter Vortisch
    - Marguerite Zarrillo

Membership Update

- 11 new members effective 4/15/16
  - Mark Brackstone
  - Benjamin Coifman
  - Nicolas Chiabaut
  - Serge Hoogendoorn
  - Xiaopeng Li
  - Markos Papageorgiou
  - Haizhong Wang
  - Weihua Gu (Young member)
  - Ilgin Guler (Young member)
  - Alireza Talebpour (Young member)

Membership Update

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

TRB Report

- Robert Bertini
- Rich Cunard

U.S. DOT/FHWA Report

- Jim Sturrock
  - Transportation Systems Simulation Manual
  - 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	Hamdar/Talebpour
9.	MFD Data Sets	Laval
10.	Publication Impact Factors	Geroliminis/Gayah
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Joint Traffic Simulation (SimSub) Subcommittee Report

Presented by

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

Transportation System Simulation Manual Workshop
96th Transportation Research Board Annual Meeting

January 2017

Sunday Workshop

- Workshop Title: Emerging Needs for Improving Existing Simulation Models
- simulation models still lack in several areas that limit their applicability, particularly with the introduction of CV and AV
- Address emerging needs with focus on:
  - Impact of geometric design features
  - Utilizing detailed trajectory data in modeling
  - Impact of CV/AV introduction on equipped and no-equipped vehicle operations.

SimSub Meeting Program

- Best paper award: “DDI signal phasing scheme evaluation using microsimulation
- Presentations on on-going USDOT/FHWA research activities
  - TSSM
  - ATDM and DMA AMS
  - ETFOMM
- SimSub and ITE SimCap collaboraton
- Presentations on recent developments in modeling
- Summer meeting decision
- Subcommittee website and Google Group discussion

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Reports

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

Outreach and Diversity Subcommittee

AHB45 Meeting

Washington DC, USA

January, 2017

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

- 4 Lines of Action/Events in 2016/2017:
  1. 2016 Automated Vehicle Symposium Breakout Session (Xiaopeng Li)
  2. 2017 Transportation Research Board Annual Meeting Events (Samer Hamdar)
  3. Website and Outreach Platform to Industry (Samer Hamdar)

  4- 2017 Traffic and Granular Flow Conference (Samer Hamdar)

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

- AVS 2016 – AVS 2017:
  - Speakers/Report
  - Book Chapter Contribution

→ AVS 2017

1. **Keynote presentations (one hour)**
   1. Dr. Hani Mahmassani, Northwestern University
   2. Dr. Pravin Varaiya, University of California, Berkeley
2. **Session presentations (one hour)**
   1. Dr. Osman Altan, Federal Highway Administration
   2. Simeon Calvert, TNO
   3. Jan-Niklas Meier, CAMP
3. **Panel Discussion Session** (**one hour**)

The subcommittee is taking the initiative to draft the book chapter. There will be 2 major components: (1) summary of keynote talks, and (2) take-away from panel discussion. We will take care of (2). For (1), we would love to have a summary from each speaker. The summary doesn't have to be extensive, but it will be ideal to have (i) some background introduction (to help readers understand the context), (ii) main conclusion, and (ii) potential directions for future research. The deadline for submission of the manuscripts is **Wed, Feb 15, 2017**. So I will really appreciate it if you can send me the summary **before Jan 15, 2017**. Thereafter, the subcommittee will integrate all the summaries and send out a draft for you to review in two weeks.

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

2. 2017 Transportation Research Board Annual Meeting Events (8-12 January 2017):
   a. **Call for Papers:** 29 Pagers Submitted – 4 Papers → 1 Lectern Session; 3 Posters

   b. **Workshop** proposals (Sunday January 8, 2017):
      i. Workshop 1: **Active Transportation Operation and Demand Management in Connected/Automated Traffic Systems: Data Collection and Analytics, Modeling and Control** (4 co-sponsoring committees/subcommittees; linking supply and demand models)

      i. Workshop 2: **Emerging Needs for Improving Simulation Models in The Immediate, Intermediate and Long-Term Horizons** (4 co-sponsoring committees lead by AHB45(1): looking into the different connectivity and automation levels of vehicles) - ~60 Attendees

3. Website and Outreach Platform to Industry:
   a. Contact information of **industry personnel** (gathered through the AHB45(3) events at the TRB meetings and the AVS symposiums) synthesized to form an outreach platform

   Based on one workshop + two AVS – Expertise Library

   a. **Platform** equivalent to a page posting latest research performed by the committee members/friends (with corresponding expertise) - visited by industry personnel/representatives for possible collaboration

   b. Platform part of **AHB45(3) website** (under construction: https://tftCAV.seas.gwu.edu (http://blogs.gwu.edu/tftcat/)

4. 2017 Traffic and Granular Flow Conference (TGF'17)
   a. **George Washington University** - Main Campus, Washington DC, USA (19-21 July 2017)
   b. Conference ends Friday 21 July, 2017 – **ISTTT 22** (Evanston, Illinois, USA – 1.5 hour apart) starts on Monday July 24, 2017 (i.e. same trip to the US for two conferences in order to encourage additional participation from non-US researchers)
   c. Conference **theme** (in line with AHB45(3) vision): From Nano-Particle Dynamics to Smart Cities: The Role of Technology in the Understanding of Systems Evolution
   d. Summer Meeting for AHB45(3)

4. 2017 Traffic and Granular Flow Conference (cont.)

d. Important Dates:

i. 01 August 2016: Call for Abstracts (website announced in upcoming newsletter)

ii. 30 January 2017: Deadline of Abstract Submission

iii. 01 May 2017: Notification of Acceptance

iv. 29 May 2017: End of Early Bird Registration

v. 03 July 2017: End of Registration

vi. 19- 21 July 2017: Conference

vii. 02 October 2017: Full paper submission deadline

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

4. 2017 Traffic and Granular Flow Conference (cont.)
   e. The TGF'17 **International Scientific Committee** formed. If
   f. The TGF'17 **website**: https://tgf17.seas.gwu.edu
   g. Call for abstracts and abstract submission portal active – Deadline: January 30, 2017
   h. Topics including: connected and automated vehicles (CAVs); intermodal urban traffic; granular flow and dynamics of granular materials; Pedestrian detection and modeling; Evacuation dynamics; collective motion in biological; nano-particles and molecular dynamics; social networks; internet of things (IoT)

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
  - Menendez Monica
  - Gabor Orosz
  - Alireza Talebpour

Breakout Group Title: TRAFFIC FLOW OF CONNECTED AUTOMATED VEHICLES

Summary of Meeting Agenda:

1. **Keynote presentations (one hour)**
    1. Dr. Hani Mahmassani, Northwestern University
    2. Dr. Pravin Varaiya, University of California, Berkeley
2. **Session presentations (one hour)**
    1. Dr. Osman Altan, Federal Highway Administration
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3. **Panel Discussion Session (one hour)**

Breakout Group Title: TRAFFIC FLOW OF CONNECTED AUTOMATED VEHICLES

Summary of Key Findings/Lessons Learned from Breakout Discussion:

- Low hanging fruit available for using ACC to reduce reaction time at intersections
- Methodologies
  - Simulation – virtual testbed
  - Traffic worthiness as a criterion to design and verify CAV algorithms
  - Measures: safety, throughput (capacity), stability (local and global), flow breakdown (reliability), sustainability
- Implications to traffic flow modeling
  - Need flexibility in incorporating different communication latencies
  - Fundamental issues on human driver behavior and vehicle interactions

Breakout Group Title: TRAFFIC FLOW OF CONNECTED AUTOMATED VEHICLES

Recommended Action Items:

- Need more field experiments and ground truth data to validate model assumptions
- Cheap and accurate positioning technology is critical to CACC implementation but is yet a challenge
- DSRC channels may need to be fully utilized
- Future research
  - CACC platoon broken by regular vehicles
  - Various combinations of CAV, CV, AV and regular vehicles
  - Impact of heterogeneous vehicles (e.g., trucks and passenger cars)
  - Impact of infrastructure and weather on traffic flow models
  - Impact of electric vehicles

In the process of developing a book chapter. The previous version is is available at http://link.springer.com/chapter/10.1007/978-3-319-40503-2_20.

Breakout Group Title: TRAFFIC FLOW OF CONNECTED AUTOMATED VEHICLES

Thanks to all members on the organization committee!

Co-Chair	Xiaopeng Li	xiaopengli@usf.edu
Co-Chair	Haizhong Wang	Haizhong.Wang@oregonstate.edu
	Sue Ahn	sue.ahn@wisc.edu
	Robert L. Bertini	rbertini@calpoly.edu
	Mark Brackstone	Mark.brackstone@aimsun.com
	Danjue Chen	danjuechen@gmail.com
	Samer Hamdar	hamdar@gwu.edu
	Steve Mattingly	mattingly@uta.edu
	Monica Menendez	monica.menendez@ivt.baug.ethz.ch
	Gabor Orosz	orosz@umich.edu
	Alireza Talebpour	atalebpour@tamu.edu

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Traffic Flow Theory Research Subommittee

January, 2017

Objectives

- Develop and maintain an up-to-date set of peer-reviewed research needs statements.
- Assure that committee approved statements are included in the TRB RNS database
- Coordinate with other committees
- Maximize the probability of statement is funded
- Make those who manage and conduct research aware of committee's RNSs.

Past Efforts

- SimSub Survey (about 50 participants) identified and prioritized 43 research issues in 2006
- Traffic flow theory survey in 2008
- TFT and HCQS Joint Summer Meeting Research Workshop in Ft. Lauderdale

Research Survey

- Please identify two to three research problems/issues that you think should be included in the research problem statement list of the committee. Please, be as detailed as possible in mentioning the research problem statements. .

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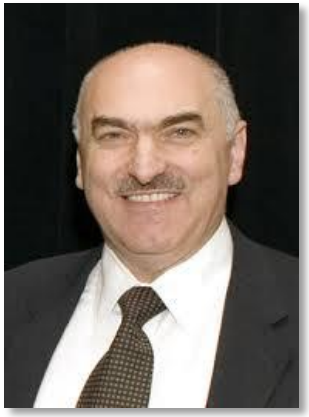
Paper Review & Sessions

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,
  - 11 papers received

- 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,
  - 37 papers received
  - 1 podium session

Special Calls for Papers

- Traffic Flow Modeling of Connected and Automated Transportation Systems
  - Organizers: Samer Hamdar, Xiaopeng Li, Danjue Chen, Alireza Talebpour, Monica Menendez, Robert Bertini, Soyoung Ahn, Elise Miller-Hooks, Steven Shladover, Mohammed Hadi
  - 33 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
  - 9 papers received

- **Special Calls for 2018 Due in May 2017**
  - Topics?

Paper Review Statistics

Annual Meeting	2017	2016	2015	2014	2013	2012	2011	2010
Papers Received	**207**	173	201	195	172	177	119	101
Percent increase	20%	-14%	4%	13%	-3%	49%	18%	10%
Presentation only	67	54	48	32	27	32	22	13
Publication only	1	2	4	3	5	5	1	4
Present and publish	139	117	149	160	140	140	96	84
Submitted Presentation	**206**	171	197	192	167	172	118	97
Lectern Sessions	6	6	6	5	6	5	4	4
Lectern Papers	30	31	27	23	30	25	20	20
Poster Sessions	4	3	2	2	3 (+1)	4	2	2
Poster Papers	84	71	80	84	69 (+6)	67	60	40
Subtotal	114	102	107	107	99	92	80	60
Percent Accepted	55%	60%	54%	56%	59%	53%	67%	62%
Rejected	92	70	90	85	68	80	38	37

Paper Review Statistics

Annual Meeting	2017	2016	2015	2014	2013	2012	2011	2010
Submitted Publication	**140**	119	152	163	145	145	97	88
Accepted	0	0	0	1	0	0	2	0
Revise and re-review	35	29	42	44	53	44	35	0
To be determined	0	7	5	4	3	0	0	31
Subtotal	35	36	47	49	56	44	37	31
Publication Slots	28	~24	~30	35	33	36	30	25
Acceptance Rate	20%	20%	20%	22%	23%	25%	31%	28%
Rejected	105	81	105	95	89	109	49	57

By the Numbers 2016

Paper Review Statistics

Annual Meeting	2017	2016	2015	2014	2013	2012	2011	2010
Reviews								
Assigned	824	902	804	811	750	712	568	441
Assigned/paper	4.0	5.2	4	4.2	4.4	4	4.8	4.4
Received	724	605	720	695	634	597	481	394
Received/paper	3.5	3.5	3.6	3.6	3.7	3.4	4	3.9
Response rate	88%	67%	90%	86%	85%	84%	85%	89%
TFT Reviewer Pool	591	563	526	476	433	440	310+	282
Number of Reviews	0-28	0-45	0-38	0-36	0-33	1-32		1–34
Average	4	5	4.7	5.5	5.5	5.3		6.2
Total Reviews	2372	2135	2469	2622	2368	2330		1500

By the Numbers 2016

Chair Letter

January 3, 2017

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 8-12, 2017 (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 9, 2017 1:30 PM-5:30 PM, Marriott Marquis, Marquis Ballroom Salon 6.
   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 5.
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, Marquis Ballroom Salon 9.
6. **Workshops**: This year we are sponsoring or co-sponsoring two workshops and one doctoral student workshop:
   1. **Workshop 134** Emerging Needs for Improving Simulation Models in the Immediate, Intermediate, and Long-Term Horizons: Sunday 9:00 AM-12:00 PM, Convention Center, 103A. Join us for the workshop co-sponsored by SimSub and CAV Sub and get there early since there will be a big crowd.
   2. **Workshop 898** Active Transportation Operation and Demand Management in Connected and Automated Traffic Systems: Data Collection and Analytics, Modeling, and Control: Thursday 8:00 AM-12:00 PM, Convention Center, 101. Join us for the annual CAV subcommittee workshop and support our new subcommittee.
   3. **Doctoral Student Workshop 195** Transportation Modeling: Sunday 1:30 PM-5:00 PM, Convention Center, 146A.
7. **Lectern Sessions**: We have six lectern sessions this year:
   1. **237** Traffic Flow Modeling of Connected and Automated Transportation Systems: Monday 8:00 AM-9:45 AM, Convention Center, 101
   2. **321** Car-following Models and Longitudinal Vehicle Control: Monday 10:15 AM-12:00 PM, Convention Center, 101
   3. **582** Network Level Modeling and Control: Tuesday 10:15 AM-12:00 PM, Convention Center, 101
   4. **649** Traffic State Estimation: Tuesday 1:30 PM-3:15 PM, Convention Center, 101
   5. **767** Traffic Modeling and Traffic Control: Tuesday 6:00 PM-7:30 PM, Convention Center, 101
   6. **875** Modeling and Control of Multimodal and Pedestrian Systems: Wednesday 2:30 PM-4:00 PM, Convention Center, 101
8. **Poster Sessions**: We are sponsoring three poster sessions—please attend and meet the authors:
   1. **532** Traffic Flow Theory and Characteristics, Part 1: Tuesday 8:00 AM-9:45 AM, Convention Center, Hall E
   2. **731** Traffic Flow Theory and Characteristics, Part 2: Tuesday 3:45 PM-5:30 PM, Convention Center, Hall E
   3. **798** Traffic Flow Theory and Characteristics, Part 3: Wednesday 8:00 AM-9:45 AM, Convention Center, Hall E
   4. **848** Traffic Flow Theory and Characteristics, Part 4: Wednesday 10:15 AM-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

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Sessions

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Awards

- 2016 Award Committee
  - Chair: Ludovic Leclercq
  - Monica Menendez
  - Robert Bertini
  - Nathan Gartner

- 2016 Greenshields Award
  - Chair: Monica Menendez
  - Robert Bertini
  - Nathan Gartner

Greenshields Prize

Greenshields Prize for 2016

16-0003 - Capacity drops at merges: analytical expressions for multilane freeways, Transportation Research Record, Issue 2560, 2016, pp 1–9

By Leclercq, L.(1), Marczak, F. (1), Knoop, V.(2), Hoogendoorn, S.(2)

(1) Univ. Lyon, IFSTTAR, ENTPE ; (2) TU Delft

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.

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 last year !

- Paper 16-0003 - Capacity drops at merges: analytical expressions for multilane freeways
- by Ludovic Leclercq, Florian Marczak, Victor Knoop, and Serge Hoogendoorn

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

Only one paper with medium scores fill the criteria in 2016
=> No recommendation

Cunard Award for 2016

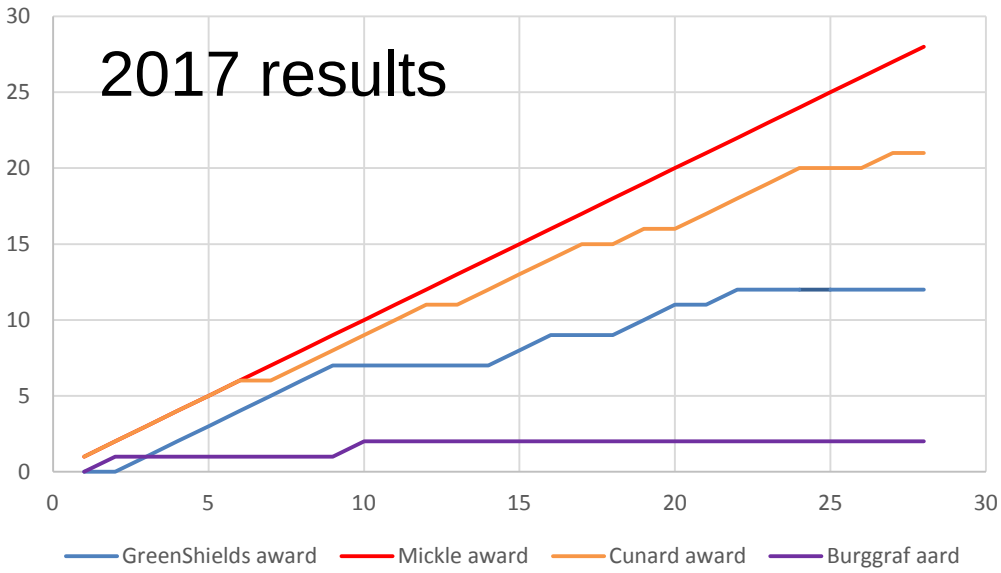
2016 Best 1st Young Author Paper in the area of Operations:

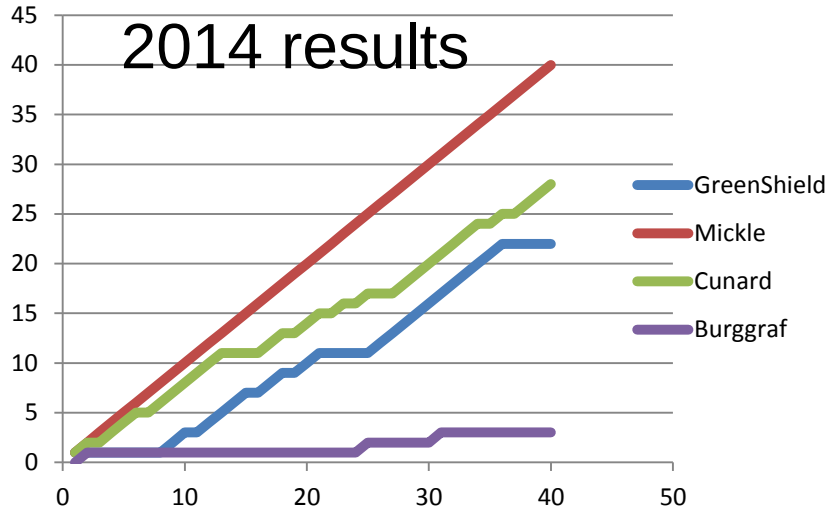
- 16-5617 – Car-following and lane-changing behavior involving heavy vehicles
- by Danjue Chen, Soyoung Ahn, Soohyuk Bang, and David Noyce
  University of Wisconsin-Madison

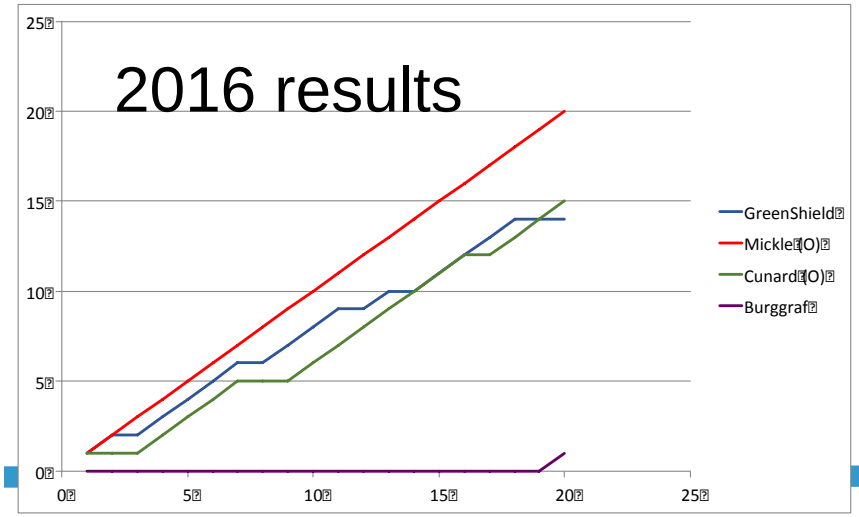
- 2015: On Traffic Relaxation, Anticipation and Hysteresis; Hui Deng, University of California, Davis ; H. Michael Zhang, University of California, Davis
- 2014: Clustering Approach to Assess Travel Time Variability of Arterials, Hans, E., Chiabaut, N., Leclercq, L., Univ. Lyon
- 2013: Inhomogeneous 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

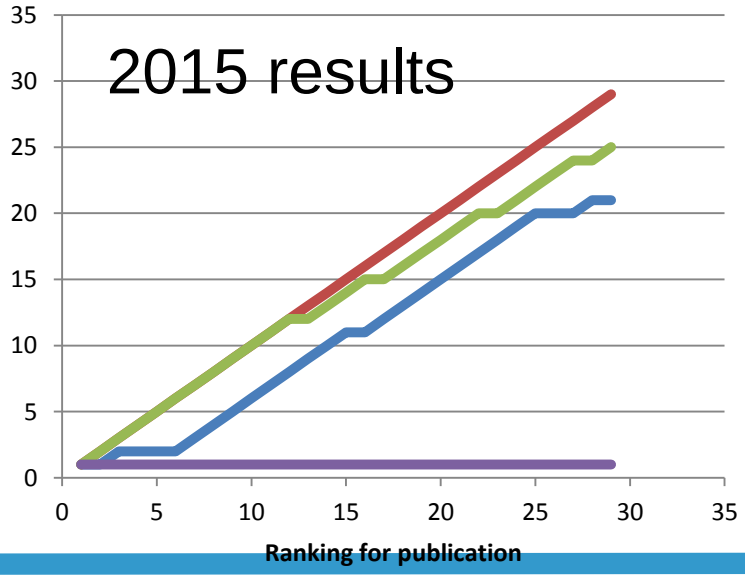
Eligibility of Papers for Awards (2017)

Eligibility for TFT 2017 paper









Only papers submitted to TRR ar

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)
- Less papers are dealing with data this year, certainly because of the success the autonomous vehicle call !
- We may consider this year to introduce a second award for a theoritical paper

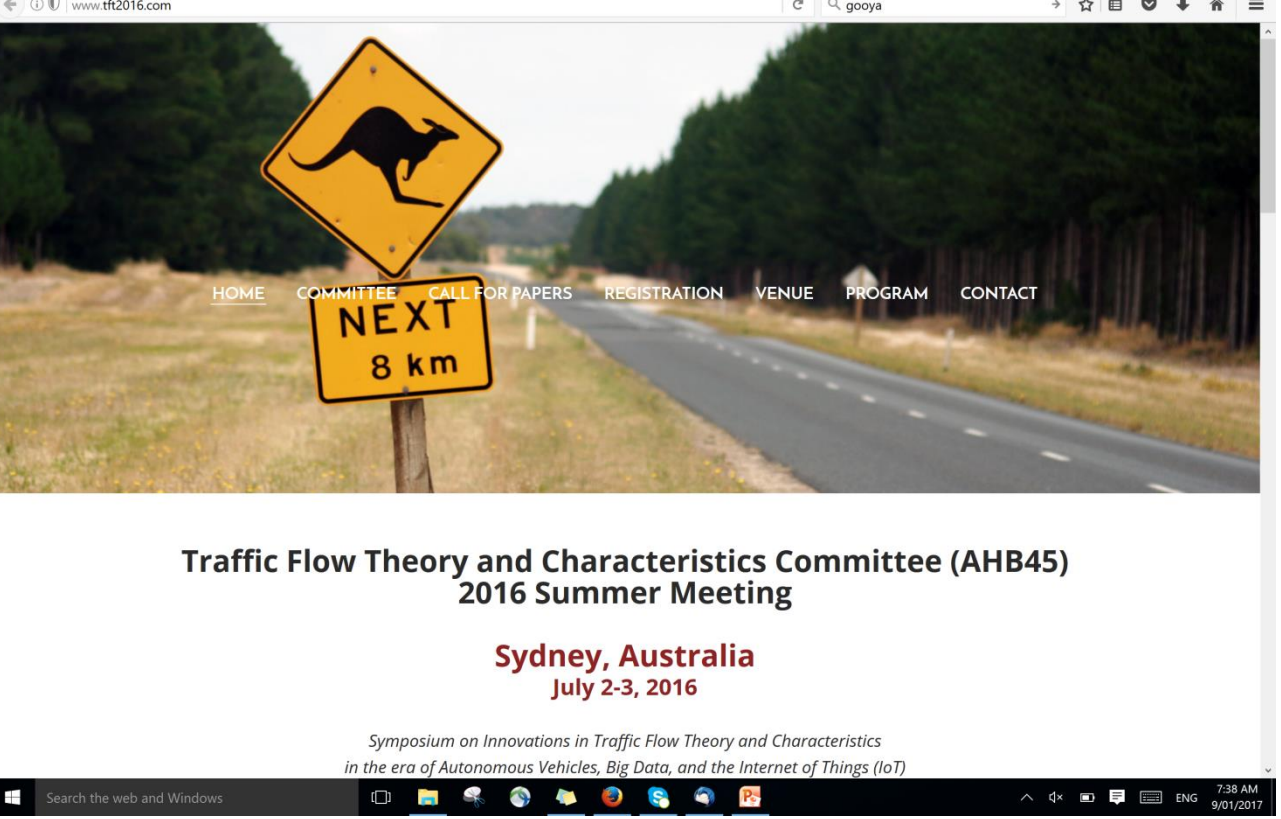
We are currently working on the 2017 award season !
The 2017 Greenshields prize will be announced during ISTTT22 in Chicago !

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	Hamdar/Talebpour
9.	MFD Data Sets	Laval
10.	Publication Impact Factors	Geroliminis/Gayah
11.	Special Report on Traffic Flow Theory	Mahmassani

Mid-Year Meetings

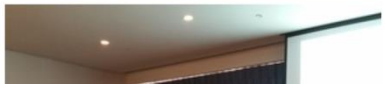
- 2007 ISTTT London (in pub)
- 2008 Greenshields Symposium, Woods Hole
- 2009 ISTTT Hong Kong (lunch table)
- 2010 Does Traffic Data Support Traffic Models? Annecy, France
- 2011 ISTTT Berkeley (one hour w/SimSub)
- 2012 Joint Summer Meeting with HCQS Committee, June 19-22, Fort Lauderdale, Florida
- 2013 ISTTT, July 17-19, Noordwijk, the Netherlands
- 2014 Portland, Oregon, USA, Symposium Celebrating 50 Years of Traffic Flow Theory
- 2015 ISTTT Kobe
- 2016 Sydney, Australia
- 2017 ISTTT Chicago
- 2018 TBA Woods Hole?



Some facts:

2 days over weekend after DTA2016 at Novotel Darling Harbour in Sydney.

We had 15 presentations and 15 posters from a total of 40+ abstract submissions. Download the program here: http://www.monash.edu/research/city-science/tft2016



Mid-Year Meetings

- 2017 ISTTT22 Chicago

Summer Meeting Discussion

- 2018 Midyear meeting
  - Woods Hole?
- Classic Paper Retreat
  - Participants: Christine Buisson, Nathan Gartner, Mohammed Hadi, Hani Mahmassani, Michael Zhang
  - Potential format: Each participant presents a selected paper and lead the discussion.

		First day	Second day	Third day
Greens-hields 2008	8:30 - 12:00	4 keynotes	Technical session (8 presentations)	Pannel discussion (10:00 - 12:00)
	Lunch			
	13:30 - 17:00	Technical session (7 presentations)	Technical session (7 presentations)	TFT Meeting
			gala dinner	

Portland 2014	5 keynotes
	1 pannel discussion
	27 presentations
	10 posters
	TFT Meeting

	First day	Second day	Third day
Proposal 2017	Technical presentations, posters, TFT meeting, keynotes		classical papers retreat
	Technical presentations, posters, TFT meeting, keynotes		classical papers retreat

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11.	Special Report on Traffic Flow Theory	Mahmassani

Outreach and Diversity Subcommittee

- Continuation of Activities Through a Transition Period:
  - Transition Period: **Alireza Talebpour** taking the lead
  - Newsletter (http://tftcnews.blogspot.com/): fewer contributions → issues with each issue corresponding to two months (more follow-up needed) – continue with Samer H. Hamdar
  - YouTube Channel (https://www.youtube.com/user/AHB45/feed) (Alireza Talebpour)
  - List of contact expanded to include personnel from industry (working with AHB45(3) committee members/volunteers) → AHB45(3) Industry Outreach Platform
  - Facebook Page (Meead Sabri: https://www.facebook.com/AHB45)
  - TFT Website (Robert Bertini: http://tft.ceng.calpoly.edu/index.htm) (needs update ☺)
  - ISTTT21 Webinars (Xiaopeng Li) → Waiting for ISTTT 22

Outreach and Diversity Subcommittee

- Special Thanks to:
  - Alireza Talebpour
  - Sasha Dong
  - Justin Schorr
  - Meead Saberi
  - Xiaopeng Li
  - Robert Bertini
  - Sue Ahn

  (All TFT website/facebook page/newsletter/webinar contributors and readers)

Transportation Research Board

Traffic Flow Theory and Characteristics Committee—AHB 45

Newsletter

Volume 5, Issue 1, January 2017

EVENTS/ANNOUNCEMENTS

TRB 2017—AHB45 Committee Workshops and Events—*2nd Announcement*

Our Traffic Flow Theory and Characteristics AHB45 Committee and its corresponding subcommittees (AHB45(1) - Simulation Sub-Committee; AHB45(2) - Crowd Flow Dynamics, Modeling and Management; AHB45(3) - Traffic Flow Modeling for Connected and Automated Vehicles) are organizing two workshops and 10 events during this coming Transportation Research Board (TRB) annual meeting (8-12 January, 2017, Washington, DC, USA). The workshops are:

Workshop 134: Emerging Needs for Improving Simulation Models in the Immediate, Intermediate, and Long-Term Horizons (Sunday January 8, 2017, 9AM—12PM; Convention Center 103A) (Details)
Workshop 898: Active Transportation and Demand Management in Connected and Automated Traffic Systems: Data Collection and Analytics, Modeling and Control (Thursday January 12, 2017, 8AM -12:00PM; Convention Center 101) (Details)

For further information on the workshops or for RSVP (especially given limited space availability), please contact Prof. Samer Hamdar at hamdar@gwu.edu. You are all encouraged to attend and provide your feedback.

Newsletter Spotlight

AHB45 TRB 2017 Activities

TGF'17 and IVS'17 Conferences

Special Issues in the Journal of Advanced Transportation and the Journal of Intelligent Transportation Systems

Posted Trajectory Data—Ohio State University

Mocopo Project Website and Data

Faculty Position—Georgia Tech

Research Assistantships and Post-Doctoral Research Position: Florida Atlantic University

TFTC Webinars, ISTTT21 series

Webinar series started on October 2015 with a bi-weekly schedule.

Overall, **24 webinars** were held in this series.

- Platform: www.gotowebinar.com
- Average number of attendees (min = 6, max= 43): 20
- Number of videos available online: 24
- Number of slides available online: 18

For more details, please visit:

- Webinars' detailed information: Google Spreadsheet
- Webinars' video: TFTC YouTube Channel

Presenters

1. Jack Haddad
2. Feixiong Liao
3. Peng Chen
4. Alireza Talebpour
5. Xiaozheng (Sean) He
6. Weihua Gu
7. Achille Fonzone
8. Alessandra Pascale
9. Carlos Lima Azevedo
10. Hongyu Chen
11. Jia Li
12. Hai Yang
13. Femke van Wageningen-Kessels
14. Wenlong Jin
15. Kun An
16. Ke Han
17. Ludovic Leclercq
18. Mehdi Keyvan-Ekbatani
19. Jiwon Kim
20. Monica Menendez
21. Joseph Chow
22. Sandeep Mudigonda
23. Mehmet Yildirimoglu
24. Sebastien Boyer

Acknowledgements:
Thank Dr. Jack Haddad from Israel Institute of Technology for generously sponsoring the gotowebinar platform.
Thank Dr. Jorge Laval from Georgia Tech for leading webinar planning and communicating with speakers.
Thank Mr. Mohsen Parsafard, a PhD candidate from the University of South Florida, for helping with technical issues.

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?

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7.	Mid-Year Meetings	Ahn
8.	Outreach and Diversity	Hamdar/Talebpour
9.	**MFD Data Sets**	**Laval**
10.	Publication Impact Factors	Geroliminis/Gayah
11.	Special Report on Traffic Flow Theory	Mahmassani

MFD Data Sets

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

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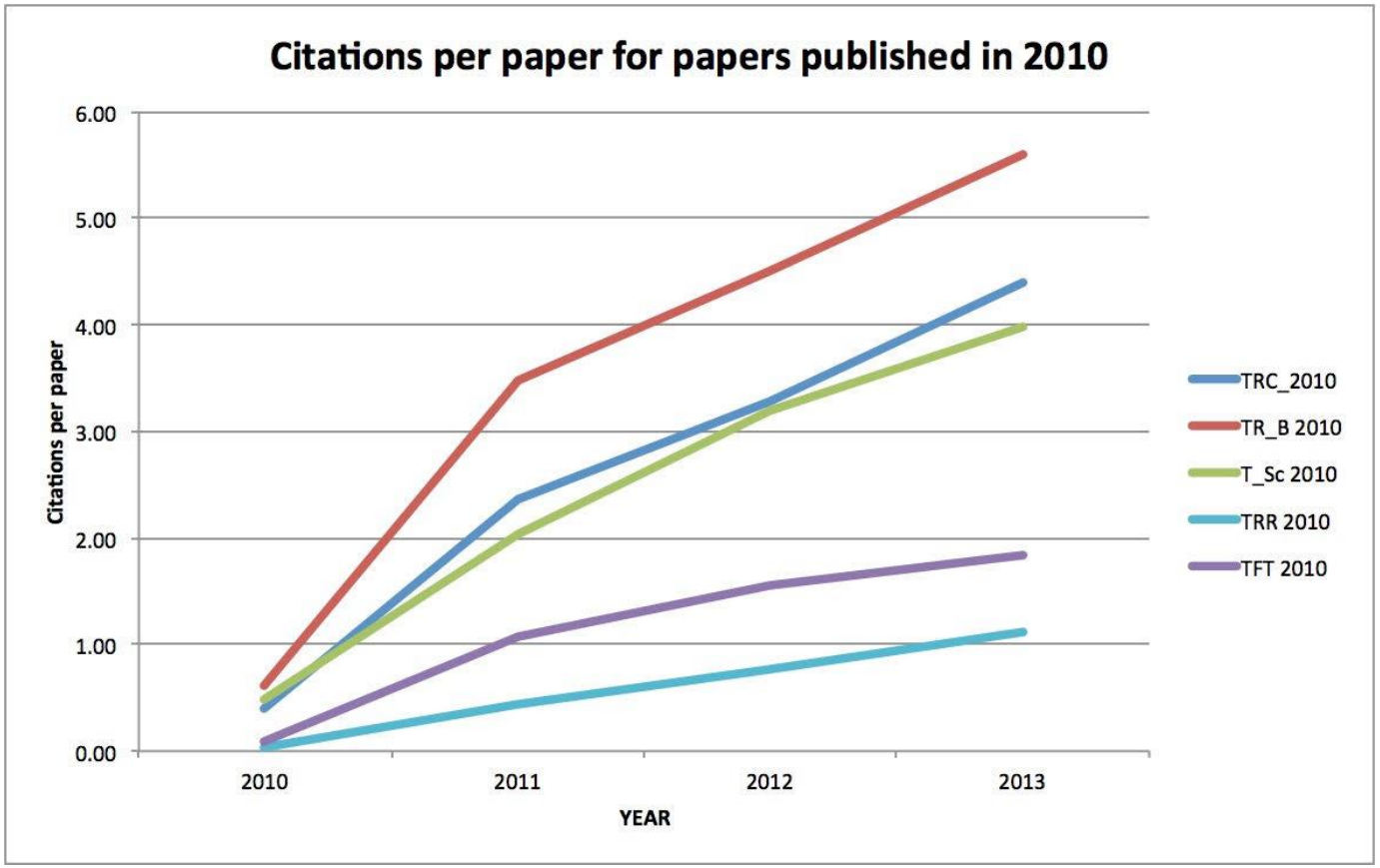
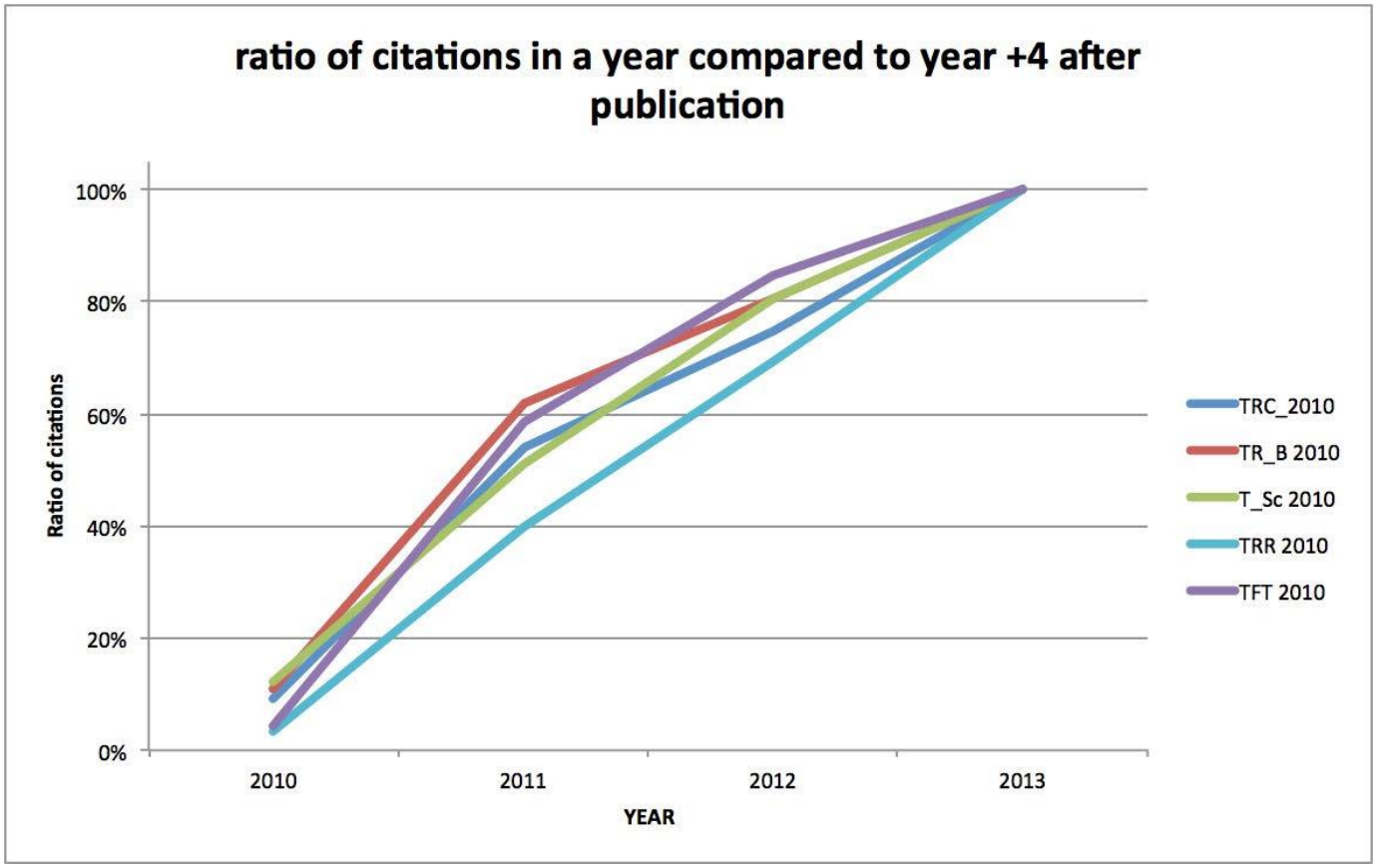
TFTC Publication Impact Factor Sub-committee


Citations per paper for papers published in 2010
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Citations per paper
2010
2011
2012
2013
YEAR
TRC_2010
TR_B 2010
T_Sc 2010
TRR 2010
TFT 2010


ratio of citations in a year compared to year +4 after publication
100%
80%
60%
40%
20%
0%
Ratio of citations
2010
2011
2012
2013
YEAR
TRC_2010
TR_B 2010
T_Sc 2010
TRR 2010
TFT 2010

TFTC-specific TRR impact factor

Year	Papers published in Year	Citations in Year + 1	Citations in Year + 2	IF
2015	27	16	---	1.468
2014	33	35	24	1.375
2013	29	38	56	1.286
2012	35	37	50	1.132
2011	28	20	44	1.160
2010	25	29	40	---

e.g., 2014 IF =

$$\frac{\textit{Number of citations articles published in 2012 and 2013 received in 2014}}{\textit{Number of articles published in 2012 and 2013}}$$

Key takeaways

- TFTC-specific TRR impact factor trending upward!
  - Still lags behind leading journals
    - TR(B) – 3.769
    - TR(C) – 3.075
    - Transportation Science – 3.295
  - But well ahead of general TRR – 0.60
- TFTC-specific TRR articles not cited as much as articles from leading journals
  - Lacks citation “boost” in first year after publication

Key issues

- TRR production cycle too long
  - Papers available 1 year+ after initial publication decision
- TRR revision process hindered by timeline
  - Only ~1 month to revise papers; serious revisions hard to make in this time
- TRR citation count artificially low due to citation of presentation version of papers

Measures to alleviate issues

- TRB providing DOIs for papers earlier

- TFTC publishing list of articles accepted for publication soon after decisions are made (mid-Feb)
  - List will be updated with DOIs for better citations
- TFTC review committee accelerating publication decision process to get papers in production cycle earlier
  - Should help reduce up to 12 month publication cycle
- TFTC review committee encourages members and friends to be vigilant about citing TRR versions of papers as both authors AND paper reviewers

Transportation Research Board AHB45

Committee on Traffic Flow Theory and Characteristics

Home
Members
Friends
Meetings
Documents
Links
Contact
Newsletters

TRB 2015 BLUE RIBBON COMMITTEE Presented by the Technical Activities Council

Committee Meetings

2016 Activities

95th Annual Meeting of the Transportation Research Board January 2016

- Committee Meeting Agenda: pdf
- Chair Letter: pdf
- Meeting Presentation Materials: pdf
- Committee Meeting Minutes: pdf
- Papers Recommended for Publication

2016 Summer Meeting Australia

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

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Special Report on TFT

- Hani Mahmassani

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

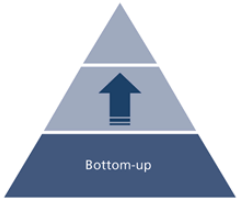
- Young Members Council
  E. Gonzales

International Liaison

- ERC funding — L. Leclercq

What is ERC?

European Research Council
Established by the European Commission



The ERC supports excellence in frontier research through a bottom-up, individual-based, pan-European competition

Budget: € 13 billion (2014-2020) - 1.9 billion €/year
€ 7.5 billion (2007-2013) - 1.1 billion €/year

Legislation

- Scientific governance: independent Scientific Council with 22 members including the ERC President; full authority over funding strategy
- Support by the ERC Executive Agency (autonomous)
- Excellence as the only criterion

Strategy

- Support for the individual scientist – no networks!
- Global peer-review
- No predetermined subjects (bottom-up)
- Support of frontier research in all fields of science and humanities

European Commission

Horizon 20
European U
for Research & Innovation

ERC Grant Schemes

European Research Council
Established by the European Commission

Starting Grants

starters
(2-7 years after PhD)
up to € 2.0 Mio
for 5 years

Consolidator Grants

consolidators
(7-12 years after PhD)
up to € 2.75 Mio
for 5 years

Advanced Grants

track-record of significant research achievements in the last 10 years
up to € 3.5 Mio
for 5 years

Proof-of-Concept

bridging gap between research - earliest stage of marketable innovation
up to €150,000 for ERC grant holders

Creative Freedom to Individual Grantee

European Research Council
Established by the European Commission

ERC offers independence, recognition & visibility

- to work on a research topic of **own choice**, with a team of **own choice**
- to gain true **financial autonomy** for 5 years
- to negotiate with the host institution the **best conditions** of work
- to attract **top team members** (EU and non-EU) **and collaborators**
- to move with the grant to any place in Europe if necessary (**portability of grants**)
- **to attract additional funding and gain recognition;** ERC is a quality label

Visits of non-EU based researchers to ERC projects

- The ERC is currently implementing international arrangements with the following non-European institutions:
  - the National Science Foundation of the **United States**;
  - the Ministry of Science, ICT and Future Planning of the **Republic of Korea**;
  - the Ministry of Science, Technology and Productive Innovation of the **Republic of Argentina**;
  - the Society for the Promotion of Science of **Japan**; the National Natural Science Foundation of the **People's Republic of China;**
  - the National Research Foundation of the **Republic of South Africa**;
  - the National Council of Science and Technology (Conacyt) of **Mexico***;*
  - the Canadian Tri-agency Institutional Programs Secretariat (TIPS) of **Canada,**
  - and the Brazilian National Council of the State Funding Agencies (CONFAP) of **Federative Republic of Brazil.**
- Please note that these international mobility initiatives all follow a similar approach. Firstly, the non-European researcher visits the ERC project and not vice versa. Secondly, the resulting costs are shared between the non-EU based research agency and the ERC project.

TRAMAN21

(TRAffic MANagement for the 21st Century)

ERC Advanced Investigator Grant

Prof. Markos Papageorgiou

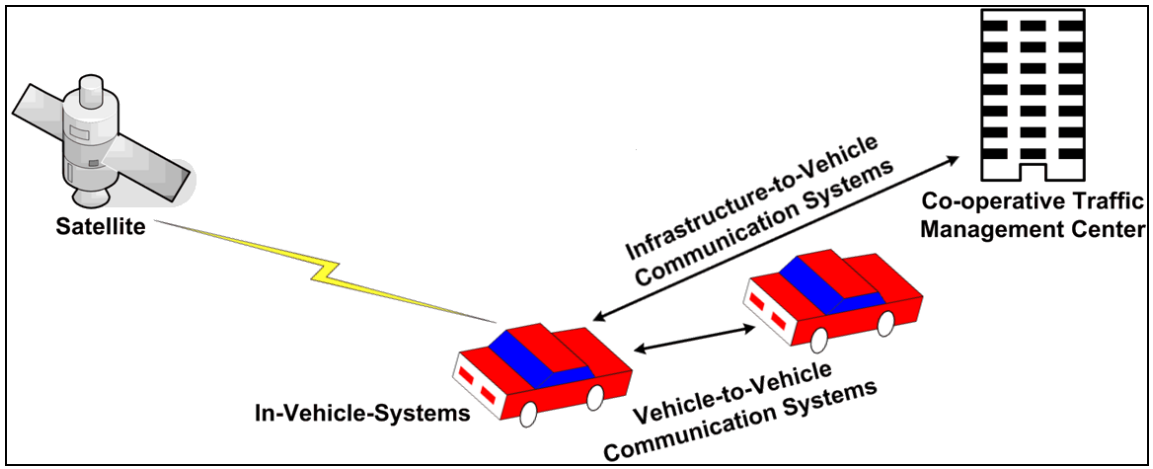
Dynamic Systems and Simulation Laboratory

Technical University of Crete

European Research Council

Established by the European Commission

- **Started** in March 2013 (through 2018)
- **Scope**: Motorway traffic of the future
- **Motivation**: A number of vehicle-centric VACS (vehicle automation and communication systems) have been introduced or are being developed
  - Implications for the traffic flow?
  - Novel opportunities for improved traffic flow?



TRAMAN21 statistics:

- Personnel: PI, 5 Senior Researchers, 5 Post-doc, 4 PhD, 4 MSc, 5 UG students, 7 visitors, 2 external cooperation
- Publications: 30 journal, 40 conference, 2 book chapters
- 1st Symposium on Management of Future motorway and urban Traffic Systems (MFTS 2016), Chania, Greece, June 2-3, 2016
  - 88 participants from 21 countries from around the globe

TRAMAN21 work:

- Overview of emerging VACS
- New traffic flow modelling approaches (microscopic and macroscopic) in presence of VACS
- Traffic control exploiting the offered new automation and connectivity capabilities (at vehicle, local, link, network-wide levels)
- Field trial: Speed harmonisation and control with conventional VSL – Melbourne, Australia

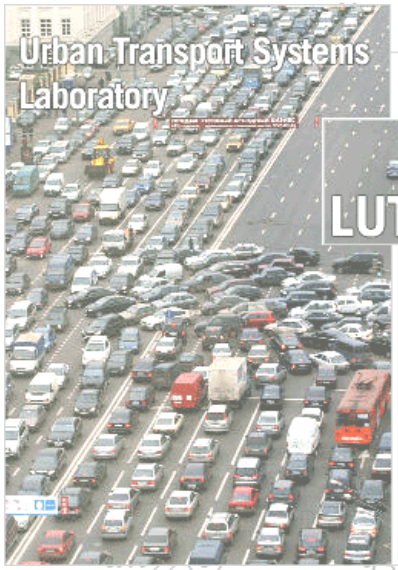
www.traman21.tuc.gr

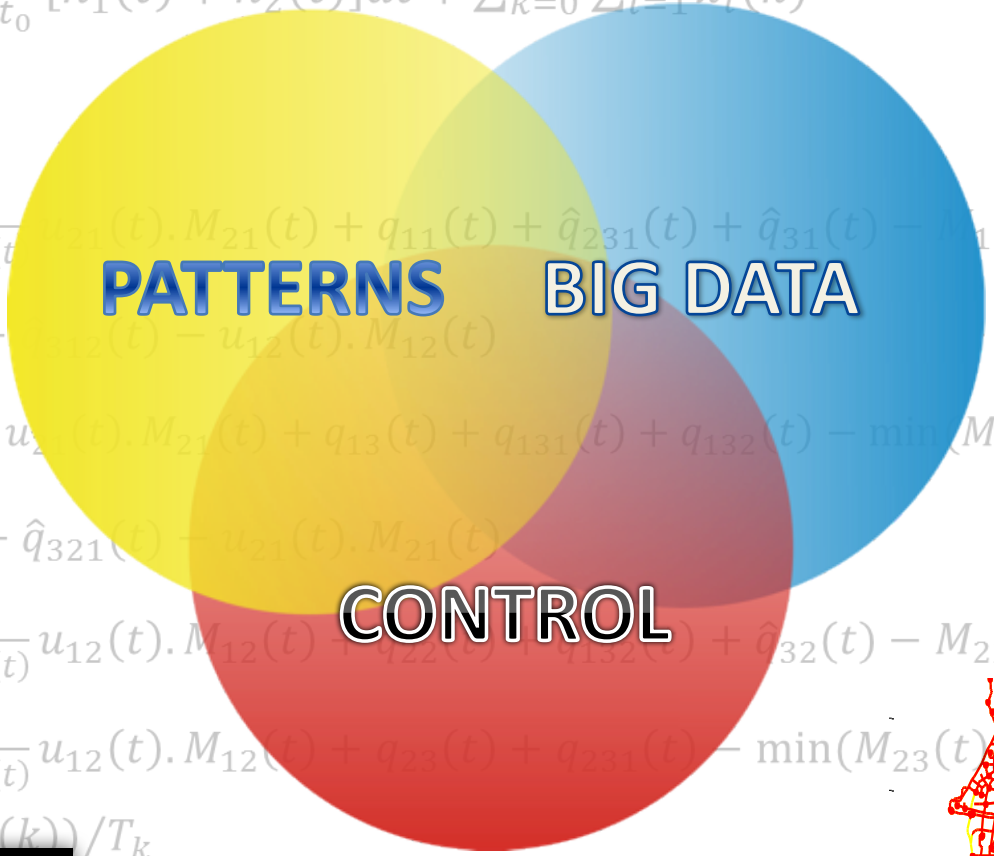
European Research Council
Established by the European Commission

ERC STARTING GRANT ΜΕΤΑΦΕΡΩ
*= (*Ancient Greek) transport or transfer

A holistic approach of mobility

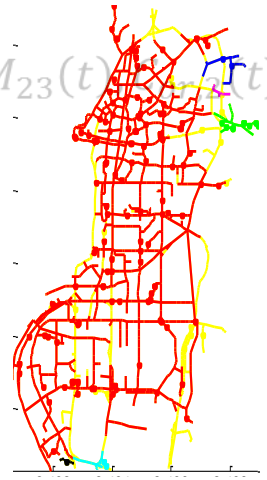
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE





600 loop-detector data

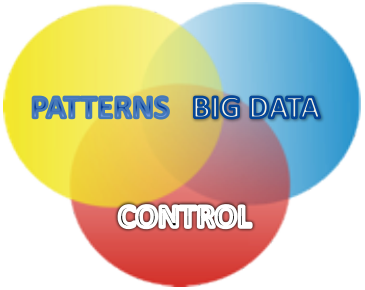
1000 bus data in Geneva



20000 taxi data in Shenzhen

A "System of Systems" Approach

MOBILITY MANAGEMENT



Car Sharing

Field tests (Grenoble and Toyota City)

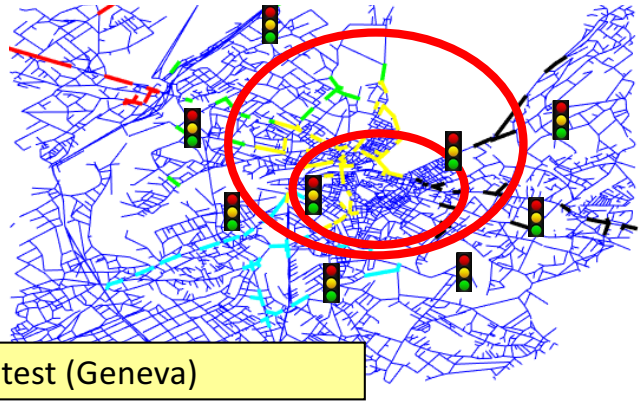
Dial-n- Ride with autonomous shuttles

Field test (Sion)

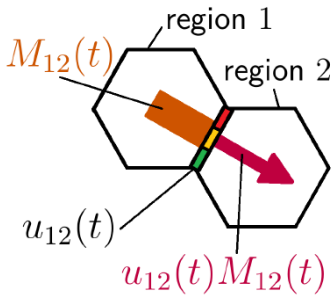
Urban Space Allocation

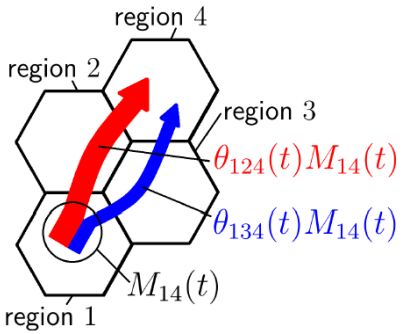
Field test (Geneva)

Hierarchical Signal Control



Perimeter control + route guidance





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MAGnUM

Multiscale and Multimodal Traffic Modelling Approach for Sustainable Management of Urban Mobility

European Commission

European Research Council

Established by the European Commission

A multiscale and multimodal traffic modeling approach for sustainable management of urban mobility

An ERC Consolidator research program

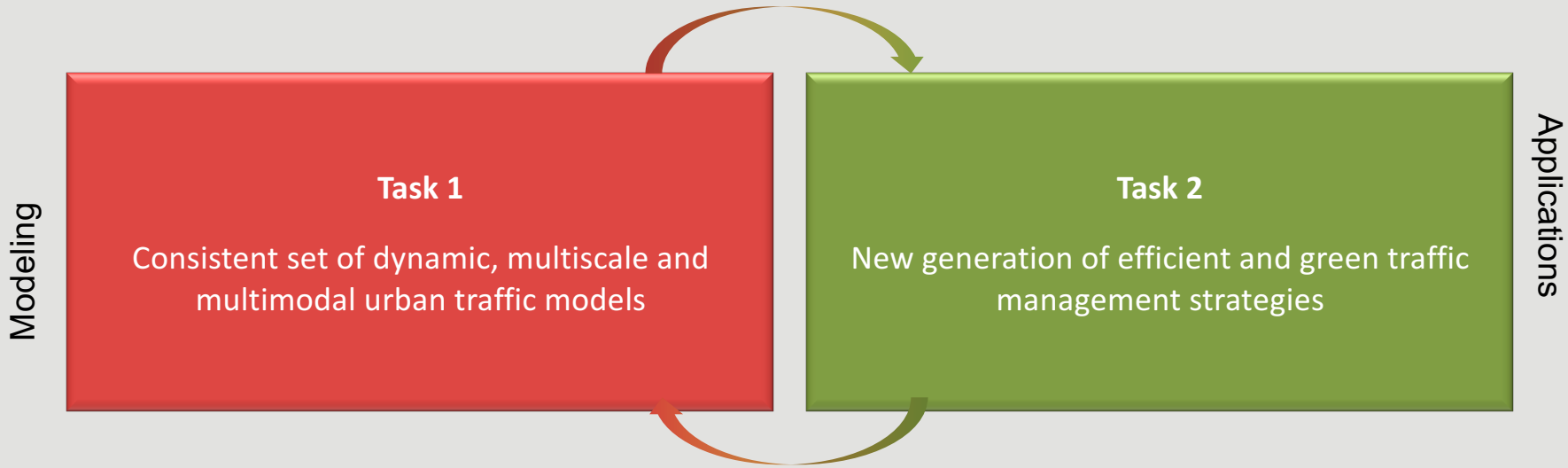
Université de Lyon

ENTPE

IFSTTAR

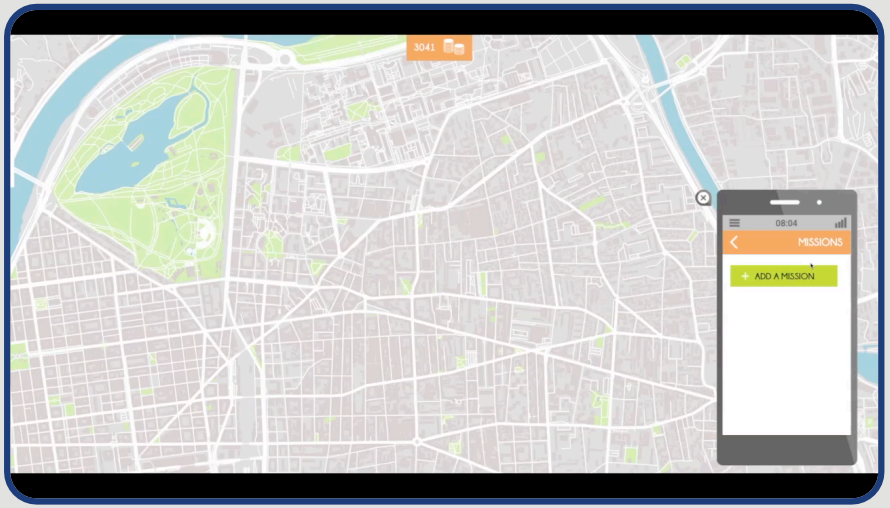
MAGnUM in a nutshell

- **Started** in September 2015 (through 2020)
- **Scope**: Urban (dynamic) models for smarter mobility
- **Motivation**: A better understanding of how individual decisions impact the global network performance in order to rethink the management of people mobility

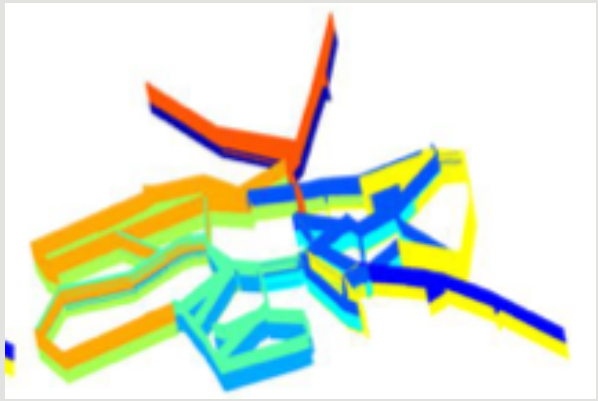


Highlighting some first year results

Analytical & Numerical investigation of MFD simulator



Simulation game environment to study user (choice) behaviors



3D Network clustering (collaboration with TU Delft)

Hosting Prof. Laval (Georgiatech) for 3 months

MAGnUM: position opening

- Sept-2017: Post-doc on multiple objectives optimization for perimeter control strategies
- 3 more post-doc positions to come in 2018
- We are welcoming international visitors (short and long stay) for fruitful collaborations !!!

Fascination with active-mode traffic modelling

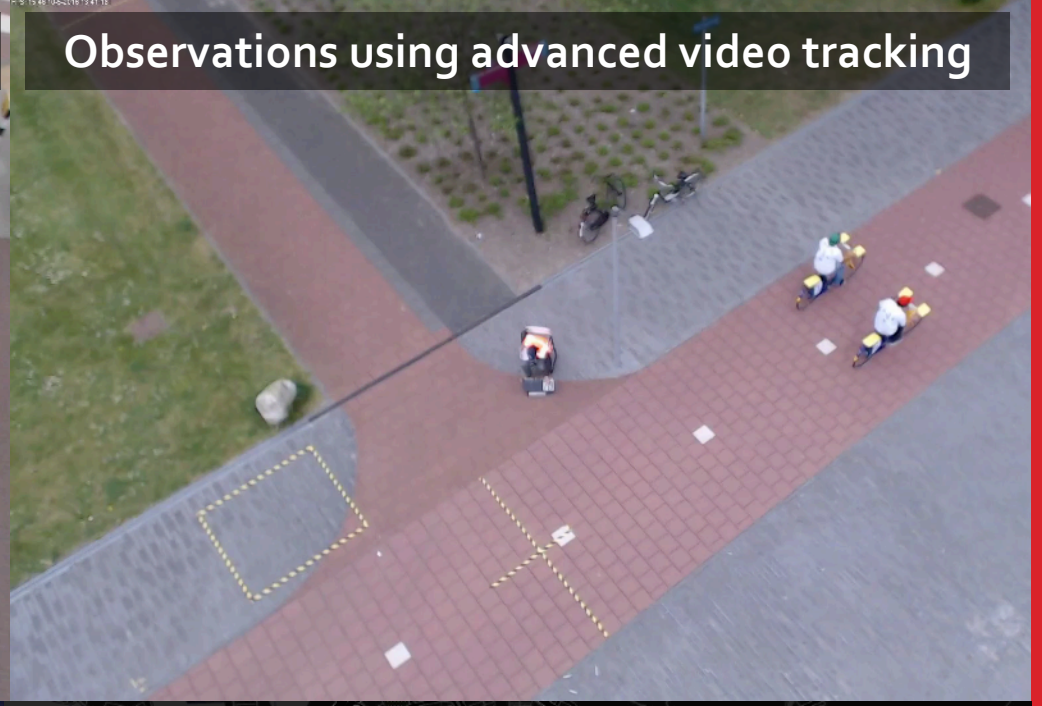
Amsterdam cycle traffic behaviour during rush hour

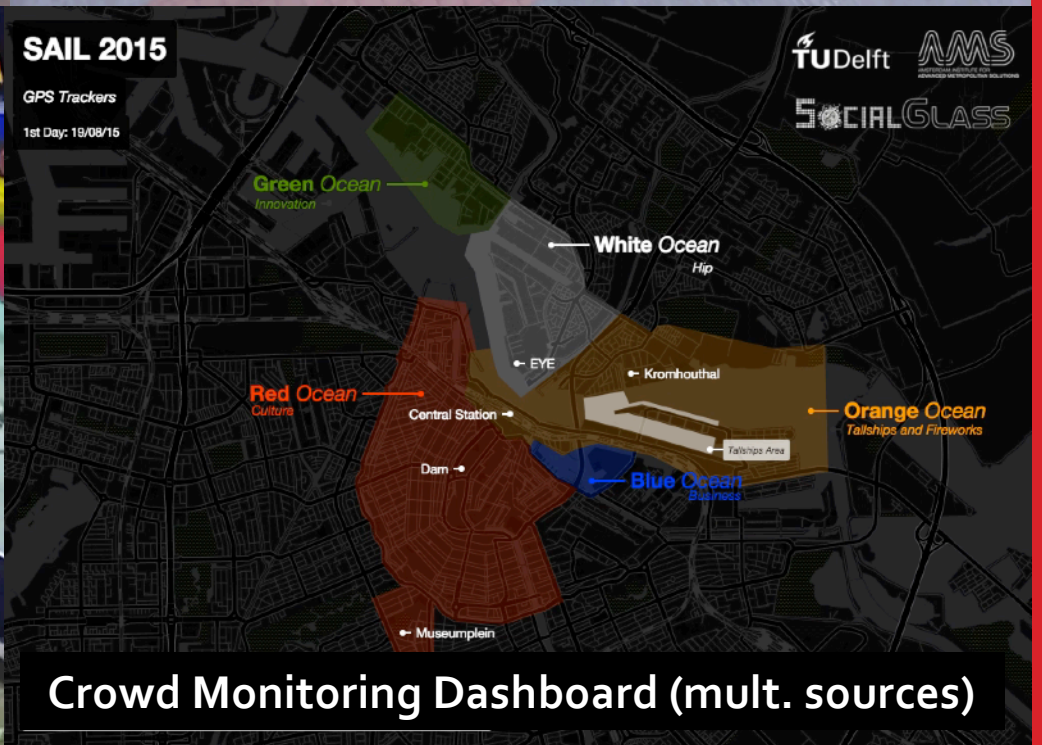
allegro

What is ALLEGRO?

- 2,9 million Euro project ERC Advanced Grant, co-sponsored by AMS
- 9 PhDs and 4 PD (research team) + supervisors
- Core of the programme deals with **Traffic and Transportation theory for Active Modes** in Urban Context
- New knowledge operations and travel behaviour should lead to innovative solutions to practical issues in active mode mobility (the AMS part)
- Enabling Active Mode Mobility (data-) lab for Advanced Active Mode data collection leading to new insights and enabling smart applications

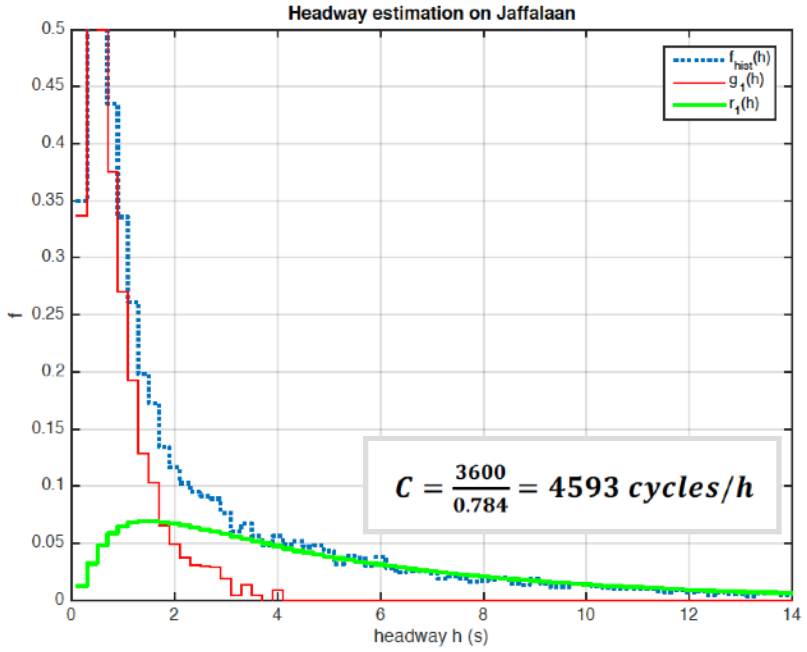
- ***Presentation focusses on TFT relevant results (data collection, modelling)***

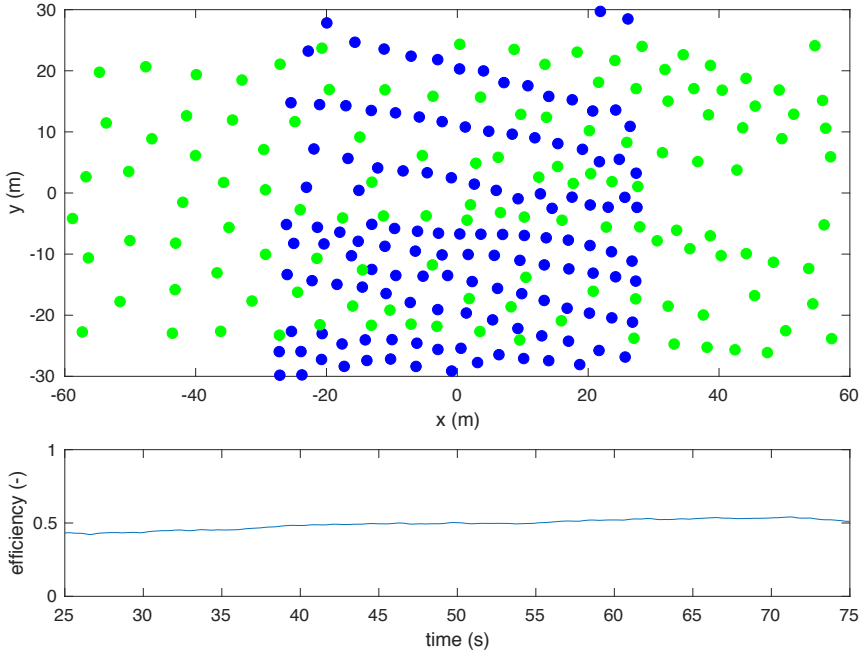


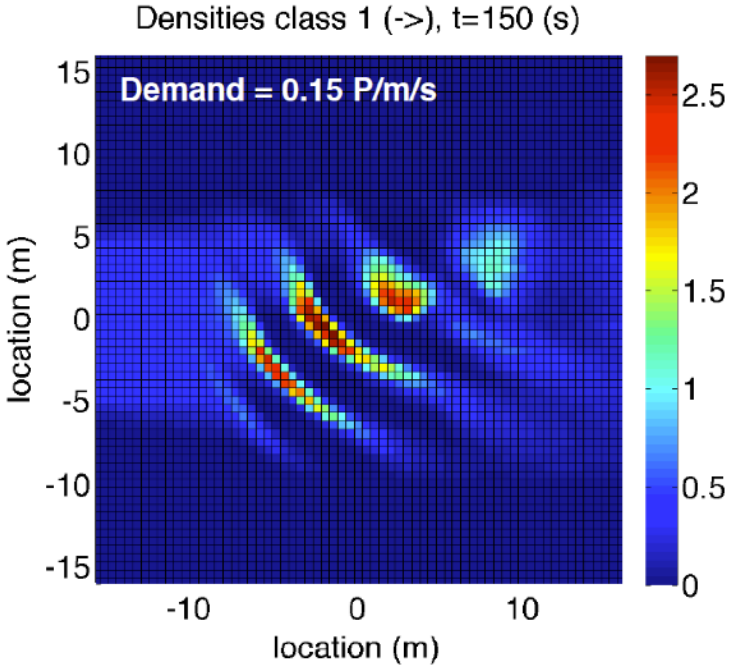


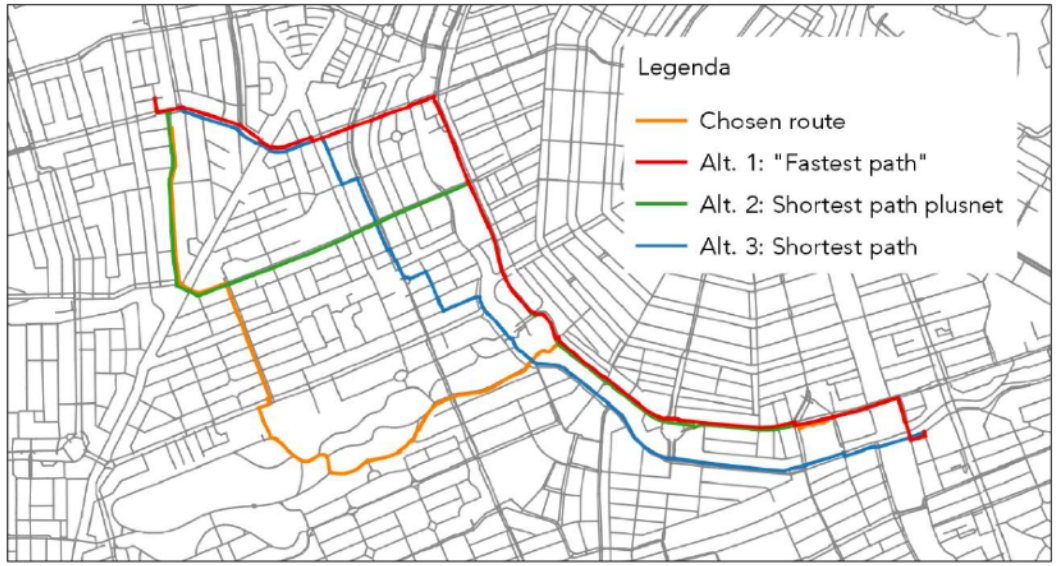
Experiments and field data collection

- Active mode data is scarce
- Set-up of different experiments and field data collection efforts
- Collect data for operations and travel behaviour
- Set-up of larger data collection efforts in year 2 (e.g. Student Hotel connected bikes)









Modelling and Theory

- Composite headway modelling
- First microscopic models for bicycle operations
- Insight into self-organisation in bike and mixed flows
- Macroscopic pedestrian flow models
- Route choice model identification for cyclists and pedestrians
- Perceptual bias in distances for active modes

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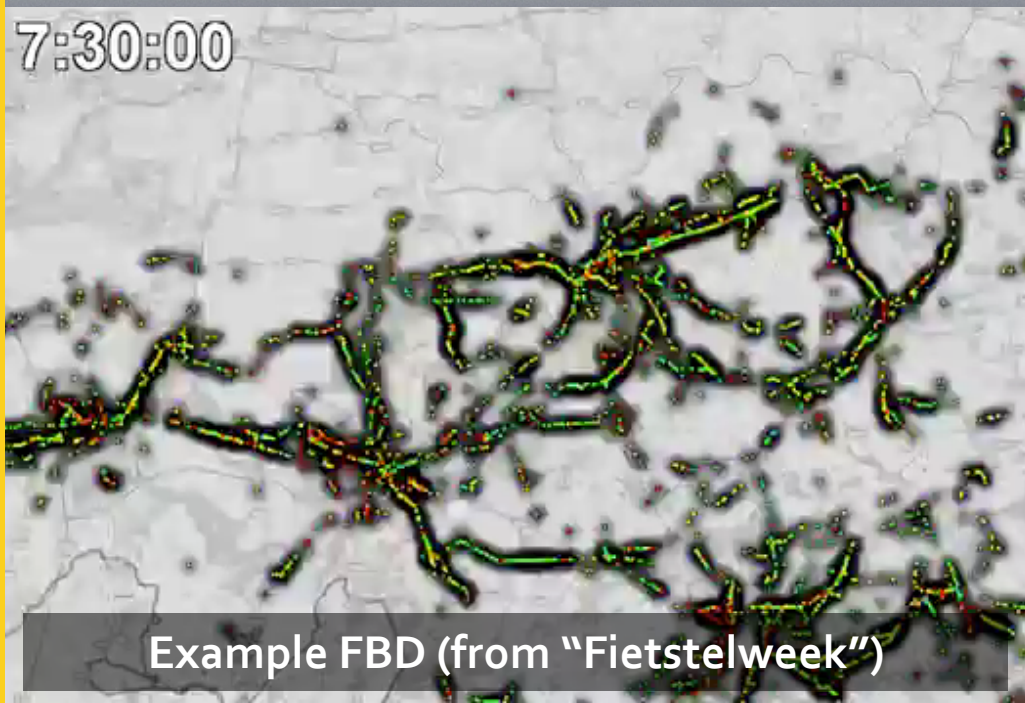
The Student Hotel project

- Studenthotel provides longer-term, sustainable housing to students (e.g. in Amsterdam, The Hague, Rotterdam)
- We provide guests with **GPS equipped bike** to use during stay
- Tracking students will provide route choice data and information on how cycling patterns changes:
  - Which routes do people actually use over time?
  - How does knowledge change over time (including distance and perception distortion)
- Also, data will be used as one of the data sources in **Bike Flow Operations Dashboard** (next to Wifi/ BT, Cyclosense, BikeScout, etc.)


Van Moof Student Hotel Bikes



Example FBD (from "Fietstelweek")


Smart active mode solutions…

Amsterdam Institute of Advanced Metropolitan Solutons

- To tackle these (and other) big city issues, Amsterdam sponsored foundation of AMS
- Collaboration between MIT, TUD, WUR and industry partners with municipality of Amsterdam as main 'client'
- Annual budget 30 million EUR
- Learning by doing: **the city as a living lab!**
- Urban Mobility (and Logistics) as one of the key issues
- Developing a vision on **Smart Sustainable Urban Mobility**

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Engineering the future city.

Announcements and Future Meetings

- MT-ITS 2017 conference, June 26-28, 2017, Naples
- 2017 MULTITUDE Summer School June 21-23, 2017
  V. Punzo
- AVS17, July 11-13, 2017, San Francisco (workshop/break-out session)
  S. Hamdar
- ISTTT22 Chicago, July 24-26, 2017
  H. Mahmassani
- Traffic and Granular Flow Conference, Washington, D.C. July 19-22, 2017
  S. Hamdar
- hEART 2017 conference, Sept 12-14, 2017, Haifa, Israel
  J. Haddad

New Business

- 2018 Annual Meeting Call for Papers

Adjourn

Please don’t forget to sign in!