

Transportation Research Board Annual Meeting

DRAFT MINUTES

Committee on Traffic Flow Theory and Characteristics (AHB45)

Tuesday, January 24, 2012, 1:30–5:30pm

Marriott Wardman Park Hotel, Wilson B & C, Washington, D.C.

1. Welcome and Call to Order

R. Bertini

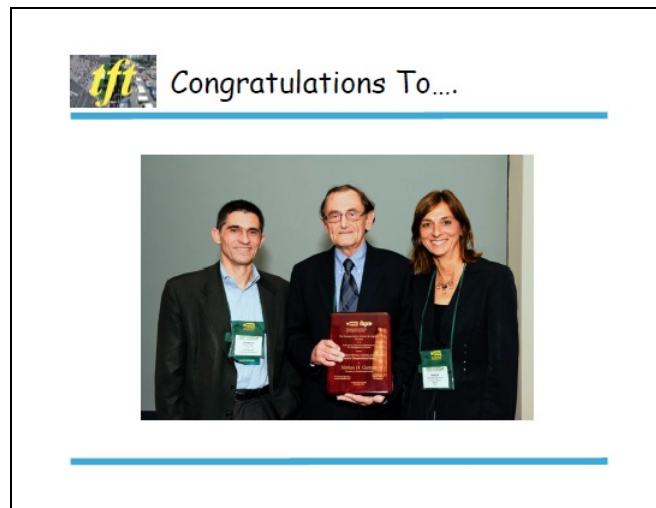
Chairman Robert Bertini called the committee to order at 1:35 p.m.

2. Introductions – Members & Friends

All Attendees

Committee members and friends introduced themselves. Chairman Bertini reminded everyone that there is no difference between friends of the committee and members in terms of participation. All can and should participate.

Congratulations to Nathan Gartner who is the recipient of Robert Herman Prize.



3. Review and Approval of Minutes

R. Bertini

The meeting minutes for the Committee Meetings of January 25, 2011 and July 17, 2011 were approved with no comments.

The chairman thanked Marguerite Zarrillo and Meead Saberi for drafting the minutes. Minutes are available on the committee website (<http://www.tft.pdx.edu/private/privdocs.htm>).

4. Committee Membership Update

R. Bertini


The total membership stands at 35 (= 25 + 5 International + 4 Young + 1 Emeritus). The chairman reported that international members are strongly represented in the committee (37%), and gender/racial diversity has been improved (~43%). However, the chairman suggested that the TFT committee is mostly an academic committee, and there is urgent need to better represent government agencies such as state DOT and MPO. Only 11% are non-academic members, none of which represent state DOT or MPO. The chairman reminded that TRB allows 5 additional members from public agencies.

Koohong Chung was identified as a good candidate for membership representing a state DOT (Caltrans).

R. Sheehan suggested creating a subcommittee to promote membership diversity (including members from public agencies.) H. Mahmassani will follow up with R. Sheehan to identify good candidates. The paper review committee will also help identify good candidates.

Mohammed Hadi has been appointed as Committee Research Coordinator.

Steve Mattingly is Communications Coordinator.



Membership Update


- Total membership: 25 + 5 International + 4 Young + 1 Emeritus = 35
- Strong international (37%)
- Improve gender/racial diversity (~43%)
- Urgent need to improve organizational diversity (11% non-academic, no state DOT or MPO)
- Mohammed Hadi has been appointed our Committee Research Coordinator—thanks Mohammed!
- Steve Mattingly is Communications Coordinator

5. Greenshields Prize

N. Gartner

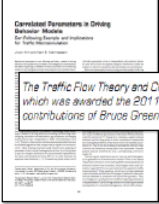
N. Gartner recapped that the inaugural Greenshields Prize was awarded to Ji-Won Kim and Hani Mahmassani for the work in TRB Paper No. 11-4034/TRR No. 2249, pp. 62-77 (“Correlated Parameters in Driving Behavior Models: Car-Following Example and Implications For Traffic Microsimulation”). Congratulations!

The decision for the second prize will be made during the midyear meeting and announced in the next TRB meeting. N. Gartner mentioned that papers submitted for both presentation and publication are eligible for the prize.




Green Shields Prize

- **Green Shields Prize Citation for 2011**
- TRB Paper No. 11-4034/TRR No. 2249, pp. 62-77
- Correlated Parameters in Driving Behavior Models: Car-Following Example and Implications For Traffic Microsimulation
- By Ji-Won Kim and Hani S. Mahmassani
- Congratulations on receiving the inaugural Green Shields Prize!



The Traffic Flow Theory and Characteristics Committee peer-reviewed this paper, which was awarded the 2011 Green Shields Prize by the committee, honoring the contributions of Bruce Green Shields to the field of traffic flow theory.



6. Chair's Report




R. Bertini

The chairman reminded that the spotlight theme for TRB 2012 is "Putting Innovation and People to Work."

The chairman reported that the reviewer pool consists of 440 members. The pool needs to be analyzed and updated, including involving more practitioners from state DOTs and MPOs.

The chairman reported that the first meeting of Young Members Council (YMC) was held on Sunday (January 22, 2012). Pingbo Tang (Western Michigan University) and Nikola Ivanov (University of Maryland) represent the Operations and Preservation Group. Four young members of the TFT committee are encouraged to participate.

A new Circular on "75 Years of the Fundamental Diagram for Traffic Flow Theory" from the Green Shields Symposium has been published and is available online.

 <h3>Chair Report</h3> <ul style="list-style-type: none"> ▪ <i>TRB 2012 Transportation: Putting Innovation and People to Work</i> ▪ Need to update paper reviewer pool (~440 members) ▪ State DOT and MPO involvement ▪ Young Members Council (YMC): Mr. Pingbo Tang (Western Michigan University) and Mr. Nikola Ivanov (University of Maryland) are representing the Operations and Preservation Group 	 <h3>Chair Report</h3> <p>New Circular Published!</p> 
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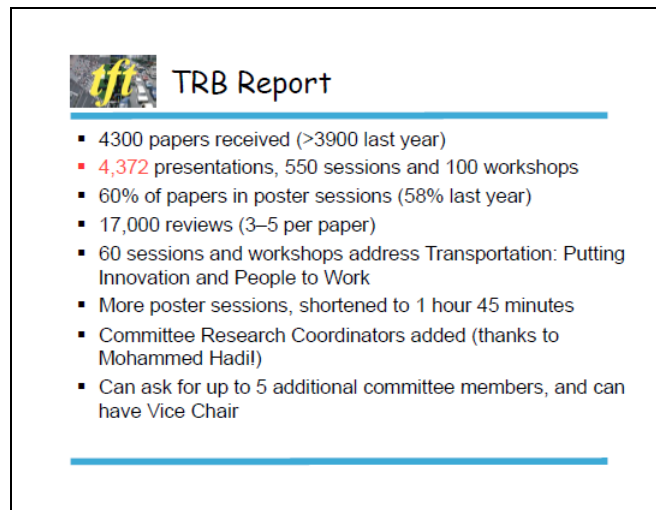
7. TRB Report

R. Cunard

R. Cunard reported that more papers were received this year (~4,300 papers versus ~3,900 papers last year). There are 4,372 presentations distributed over 550 sessions and 100 workshops. 60 sessions and workshops address the spotlight theme, "Putting Innovation and People to Work". More papers were placed in poster sessions this year (60% versus 58% last year). To accommodate this, the poster sessions were shortened to 1 hour and 45 minutes and staggered. M. Hadi commented that a poster session had time conflict (overlap) with the Simulation Subcommittee meeting. The chairman indicated that some conflict would be inevitable.

Thanks to M. Hadi, Committee Research Coordinators were added.

R. Cunard announced that the committee can ask for up to 5 additional committee members and can have Vice Chair.



The image shows a slide titled "TRB Report" with a logo on the left. The slide contains a bulleted list of key statistics and updates for the committee. The list includes: 4300 papers received (>3900 last year); 4,372 presentations, 550 sessions and 100 workshops; 60% of papers in poster sessions (58% last year); 17,000 reviews (3-5 per paper); 60 sessions and workshops address Transportation: Putting Innovation and People to Work; More poster sessions, shortened to 1 hour 45 minutes; Committee Research Coordinators added (thanks to Mohammed Hadi!); and Can ask for up to 5 additional committee members, and can have Vice Chair.

TRB Report
▪ 4300 papers received (>3900 last year)
▪ 4,372 presentations, 550 sessions and 100 workshops
▪ 60% of papers in poster sessions (58% last year)
▪ 17,000 reviews (3-5 per paper)
▪ 60 sessions and workshops address Transportation: Putting Innovation and People to Work
▪ More poster sessions, shortened to 1 hour 45 minutes
▪ Committee Research Coordinators added (thanks to Mohammed Hadi!)
▪ Can ask for up to 5 additional committee members, and can have Vice Chair

Annual Meeting Online is available and includes compendium of papers for download. The papers can be accessed using the confirmation number on the badge. H. van Lint mentioned that there was an issue with the wireless connection in the hotel and had trouble accessing the papers. B. Coifman mentioned that it was nice to be able to download papers in advance and that it would be nice to hold the Greenshields symposium every five years given the success. L. Leclercq suggested that Keyword search would be a nice feature to add.

R. Cunard reported that 1/3 of attendees are new attendees.

The DC Convention Center is being investigated as the new venue, possibly by 2015.

New committee web pages are being set up by TRB – please provide comments if the information is useful. Steve Mattingly agreed to provide support.


For TR News (a TRB bi-monthly publication), TRB is looking for topic ideas.



TRB Report


- Daily e-Newsletter, QR codes
- Annual Meeting Online includes compendium for download
- New attendees – 1/3 of attendees are “freshmen” (first time ever or first time in at least five years)
- Investigating DC Convention Center feasibility
- New committee web pages being prepared on TRB website (Steve Mattingly to support?)
- Funding Sources for Transportation Research:
<http://www.trb.org/ResearchFunding/ResearchFunding.aspx>
- New Research Program and Project Management website:
<http://www.transportationresearch.gov/rppm/default.aspx>
- Call for TR News topics

R. Cunard gave TRR Update. 950 articles have been accepted for publication in TRR, which is the record number. A survey was conducted to improve TRR, and the results will come out soon. C. Buisson suggested accepting submissions for publication in TRR with the single deadline as exists currently. A. Skabardonis reminded that the paper submission site is open all year around, although peer reviews are conducted after the August 1st deadline. H. Mahmassani objected separating the review process for TRR from the process for the Annual Meeting because that will diminish a lot of character due to a variety of factors including competition with other journals. The committee voted to retain a single deadline. (See the meeting slides for other details.)



TRB Report

Paper Submissions	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Number	2662	3070	2847	3384	3984	3954	3875	4200	4500
Total Presented	1688 (62%)	1848 (60%)	1756 (62%)	1882 (56%)	2100 (53%)	2322 (58%)	2322 (60%)	2322 (55%)	2322 (52%)
Papers - Lecture	888 (33%)	625 (20%)	667 (23%)	900 (26%)	921 (23%)	921 (23%)	912 (23%)	912 (21%)	912 (20%)
Papers - Poster	728 (27%)	752 (25%)	881 (31%)	952 (28%)	1322 (33%)	1322 (33%)	1322 (33%)	1322 (30%)	1322 (29%)
Papers - Meeting	21 (1%)	54 (2%)	31 (1%)	28 (1%)	20 (1%)	44 (1%)	44 (1%)	44 (1%)	44 (1%)
Other Papers	2 (0.1%)	5 (0.2%)	5 (0.2%)	2 (0.1%)	17 (0.3%)	14 (0.3%)	14 (0.3%)	14 (0.3%)	14 (0.3%)
Invited Presentations					1760	2950			
Total Speakers					3100	3360			
Total Agencies/Orgs					1700	?			
Sessions, Workshops, and Meetings									
Lecture Sessions	438	470	469	455	481	382	418		
Poster Sessions	46	62	68	124	132	134	145		
Workshops	62	62	73	78	86	89	110	100	
Committee Meetings			426	442	424	444	503		
Other Meetings					500*	500*			
Total Meetings					>1500	>1500			



TRR Update

- ISI Impact Factor = 0.482 for 2010
- TRR ranks 17 out of 26 Transportation Science and Technology journals
- See other measures
- 950 articles published in 2010 (next two journals 446 and 128)
- High half lives
- TRR publication board conducting survey of TRR stakeholders, results to be discussed this week.
- Future searches through TRB website will allow to search by committee
- We are posting list of our committee TRR published papers

YEAR	TRR IMPACT FACTOR
2010	0.482
2009	0.298
2008	0.259
2007	0.206
2006*	---
2005	0.145
2004	0.172
2003	0.093

*No impact factor was computed for 2006

MEASURE	TRR RANK IN 2010
Citation Impact Factor	17th
Total Cites	1st
# of Articles	1st
Cited Half-Life	4th
Eigen Factor Score**	2nd

The next Annual Meeting will be held on January 13-17, 2013 before MLK Jr. Day and Inauguration.

The Marriott Wardman Tower will be converted to condos, and TRB is investigating feasibility of moving the Annual Meeting to the DC convention center.

8. FHWA Programs & Activities


R. Sheehan

R. Sheehan's full report is also available on the website. A summary of items is provided below.

1. Traffic Analysis Toolbox Series: The toolbox incorporates recent research.
2. HCM Chapter on Active Transportation and Demand Management (ATDM)
3. Update of Traffic Analysis Tools Workshop Material
4. Workshop on Foundations of Dynamic Traffic Assignment (DTA): This is open to everyone.
5. Traffic Analysis Pooled Fund Study: "Traffic Analysis Tools Consistency: Recommended Practice"
6. Traffic Analysis Pooled Fund Study 2: "Guidance on the Level of Effort Required to Conduct Traffic Analysis"
7. Travel and Emissions Impacts of Highway Operations Strategies
8. Guidebook on Utilization of Dynamic Traffic Assignment (DTA) Modeling: It is being developed in coordination with the Network Modeling Committee. A pricing component is missing.
9. Modeling and Forecasting of Toll Revenues
10. Effective Integration of Analysis Modeling and Simulation Tools
11. Analysis of Network and Non-network impact upon Driver Behavior to improve analysis, modeling, and simulation techniques and accuracy
12. Integrated Corridor Management: An evaluation (e.g., benefit cost analysis, institutional barriers, air quality, safety, etc.) project is in contract. There is need to better understand driver behaviors. A modeling and simulation guide is complete.
13. Active Transportation and Demand Management

The Chairman mentioned that the committee should be more engaged in research problem development.


9. TFTC Subcommittee Reports

 Subcommittees	
1. Joint Subcommittee on Traffic Simulation Models	List
2. Research Problem Statements	Hadi
3. Paper Review and Sessions	Bertini
4. Greenshields Prize	Gartner
5. Mid-Year Meeting	Hadi
6. Committee Website	Bertini
7. Strategic Planning	Bertini
8. Committee Communications	Mattingly
9. Classic Papers	Ahn/Laval/Geroliminis
10. Historic Papers	Xuan
11. Special Report on Traffic Flow Theory	Mahmassani
12. NEW Teaching TFT	van Lint

9.1. Joint Subcommittee on Traffic Simulation Models G. List

The meeting took place on January 23, 2012 (Monday). There is a continued interest in Simulation Subcommittee. Anybody can participate as a member. The annual report is available on the TFT website. Suggestions/ideas for the newsletter and topics for the next year's workshop are welcome and should be submitted to G. List. Early inputs will be appreciated.

A. Skabardonis commented that attendance to the Simulation Subcommittee meeting was lower due to concurrent poster sessions.

SimSub

SimSub Website:
<http://sites.google.com/site/trbcommitteeahb45/>
To join, send email to:
TRBCommitteeAHB45@gmail.com

Within few days you will get an invitation to join "Friends of SimSub" which is a Google group through which we post announcements and distribute emails about SimSub activities.

Sunday Simulation Workshop: "Use of Simulation to Assess Safety Performance"

9.2. Research Problem Statements

M. Hadi

M. Hadi suggested that research statements should be voted and approved by the committee. Volunteers are needed to support the subcommittee.

<div style="background-color: #333; color: white; padding: 10px;"><h2 style="margin: 0;">TFT Committee Research and Back to Basic Initiative</h2></div> <p style="text-align: center; margin-top: 10px;">Washington D.C., January 2012</p>	<div style="background-color: #ccc; padding: 10px;"><h3 style="margin: 0;">TRB Back to the Basics Initiative</h3><ul style="list-style-type: none">• Major initiative of the TRB with 100 committee participating• TRB is allocating a lot of resources• Provide ongoing guidance and training through a community of Committee Research Coordinators (CRCs).• Enhance the RNS Database and other tools to help committees achieve the above vision.• Each committee has research coordinator(s)• CRCs are the coordinator of research<ul style="list-style-type: none">◦ However, it is expected that they will be helped by volunteers</div>
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<h3>Objectives</h3> <ul style="list-style-type: none"> • Develop and maintain an up-to-date set of <u>peer-reviewed</u> research needs statements. • Assure that <u>committee</u> 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. 	<h3>Current and Past Efforts</h3> <ul style="list-style-type: none"> • NGSIM workshops identified research needs with focus on microscopic simulation algorithms • SimSub Survey (about 50 participants) identified and priorezed 43 research issues in 2006. • Traffic flow theory survey in 2008 • Currently RNS has 8 statements uploaded in 2008 • RNS may have others related to TFT
<h3>Current Needs</h3> <ul style="list-style-type: none"> • Need to have a robust portfolio of needs statements • Need to write statements according to TRB requirements and maintain current with review of on-going research. Take the statements out if the research is done. <ul style="list-style-type: none"> ◦ The committee has to approve each statement in the database ◦ Using an enhanced version of the TRB Research Needs Statements (RNS) Database • Assuring that research organizations are aware of the identified research needs • Monitoring status of research of interest. 	<h3>Potential Immediate Actions</h3> <ul style="list-style-type: none"> • Workshop at the mid-year meeting • Review existing RNS databases for other committees • Collaborate with other committees • Start writing research statement for potential funding.

9.3. Paper Review

R. Bertini

The chairman thanked the members, authors, and reviewers. The summary of the paper review results is provided in the TFT website. A surge in the number of papers submitted (177). Presentation only submissions have been particularly increasing. 5 podium sessions were allocated for the TFT committee, including one joint session with the Pedestrian committee. It was mentioned that 3-5 papers per person is a reasonable expectation for the committee.

It was suggested to put all poster sessions together to reduce conflict. R. Cunard responded that such allocations will be difficult in terms of logistics.

The chairman commented that the review response rate is decreasing. An advanced notice of either acceptance or decline would be appreciated. N. Geroliminis suggested that an automatic response scheme would be useful, though it won't be easy in terms of software.

H. Mahmassani indicated that the reviewer pool contains old contact information and should be updated.

H. Mahmassani stated that presentation-only papers may be a big burden for reviewers, and it is not fair that those papers compete for podium sessions. He also raised a concern that presentation-only papers may bring down quality or impact factor because people tend to submit lower quality papers for presentation only. He suggested requiring submission for both presentation and publication.

J. Laval suggested a 2-tier system in which presentation-only papers are reviewed in a different process.

M. Zhang pointed out that requiring both will drive away good papers and supported that a 2-tier system coordinated by the subcommittee would be a good idea. Presentation-only papers should perhaps be poster presentation only.

N. Gartner reminded that the status of a paper (presentation only, etc.) is revealed to the reviewers.


B. Coifman commented that not necessarily lower quality papers are submitted to TRB for presentation only. There may be other reasons to send good papers to TRB. He supported poster presentations for presentation-only papers (except for few exceptional papers) and suggested assigning 2 reviewers per paper (with one back-up) to reduce the review load.

H. Mahmassani raised a concern about duplicative papers being submitted. They are difficult to monitor because they can be handled across multiple coordinators.

B. Coifman suggested that the chair or coordinators (in their discretion) can perhaps perform a preliminary review to filter out duplicative papers or papers outside the TFT scope.

J. Laval suggested conducting re-reviews after responses to comments are submitted. The chairman pointed out that the re-review process is already in place and depends on the coordinator.

AHB45 Committee on Traffic Flow Theory and Characteristics Paper Review History												
Annual Meeting	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Papers Received	177	119	101	82	82	88	70	89	50	42	42	25
Percent Increase	+49%	+18%	+10%	-12%	-7%	+20%	+1%	-14%	+100%	-6%	+89%	
Presentation only	32	22	13	7	9	7	3					
Publication only	0	1	4	2	1	2						
Present and publish	149	96	84	73	77	88	64					
Submitted for Presentation	172	118	107	87	81	86	70	87	75	42	38	
Lectern Sessions	5	4	4	4	4	4	4	4	4	4	4	
Lectern Papers	25	20	20	20	20	20	20	20	20	19	19	
Poster Sessions	4	2	2	2	2	2	2	2	2	0	0	
Poster Papers	87	80	40	38	33	38	32	25	30	0	0	
Subtotal	92	80	60	58	53	68	52	45	52	19	19	
Percent Accepted	53%	67%	62%	66%	65%	69%	74%	67%	69%	48%	48%	
Rejected	80	39	37	29	28	27	18	22	23	21	20	
Submitted for Publication	145	97	88	78	78	79	53	66	71	42		
Accepted	6	0	0	1								
Revised and re-review	44	36	0	14	19	16	15	4				
To be determined	0	0	31	29	18	28	21	16				
Subtotal	44	37	31	43	36	42	36	42				
Publication Slots	-36	-50	-25	27	23	22	24	26	28	-12		
Acceptance Rate	20%	37%	28%	29%	28%	25%	34%	38%	33%	30%		
Rejected	109	48	57	51	53	57	39	40	45	23		
Reviews												
Assigned	712	568	441	394	332		269	356	200			
Assigned/paper	4.0	4.8	4.4	4.3	4.0		3.9	4.5	5			
Received	597	481	384	360	315		248	317	182			
Received/paper	3.4	4.0	3.9	3.9	3.8		3.6	4.0	3			
Response Rate	84%	80%	89%	92%	90%		92%	89%				
TFT Reviewer Pool	440	370*	282									
Number of Reviews	1-32	-34										
Average	5.3	6.2										
Total Reviews	2230	1902										
Presence at List	411	404										
Annual Meeting Attendance	?	79	1	65	58	72	57	80*	80*	50*	?	
Midyear Meeting Attendance	26	65	-	39	-	-	-	-	-	-	-	
ETS/SAU Attendance	61											
Stanley Workshop Attendance												



Paper Review & Sessions

Traffic Flow Theory & Characteristics Committee Events - TRB 2012										
Type	No.	Sponsor	Title	Location	Time					
M		ARRBS	Traffic Flow Theory and Characteristics Committee	Memor	Jan 24 2012 10:00am - 5:30pm					
M		ARRBS	Traffic Simulation Models Joint Subcommittee of ARRBS, ARRL, ARRL, ARRL, ARRL, ARRL, ARRL, ARRL, ARRL, ARRL	Memor	Jan 23 2012 10:00am - 5:30pm					
M	105	ARRBS	Global Studies Research in Transportation Operations and Traffic Control	Memor	Jan 22 2012 10:00am - 12:00pm					
W	149	ARRBS	Global Studies Research in Transportation Modeling	Hybrd	Jan 22 2012 10:00am - 5:00pm					
W	161	ARRBS	Use of Simulation to Assess Safety Performance	Memor	Jan 22 2012 10:00am - 5:00pm					
P	403	ARRBS	Research in Traffic Flow Theory and Characteristics, Part 1 (Chair - Session 433, Part 1, Session 434, Part 1, Session 435, Part 1, Session 436, Part 1, Session 437, Part 1, Session 438, Part 1, Session 439, Part 1, Session 440, Part 1, Session 441, Part 1, Session 442, Part 1, Session 443, Part 1, Session 444, Part 1, Session 445, Part 1, Session 446, Part 1, Session 447, Part 1, Session 448, Part 1, Session 449, Part 1, Session 450, Part 1, Session 451, Part 1, Session 452, Part 1, Session 453, Part 1, Session 454, Part 1, Session 455, Part 1, Session 456, Part 1, Session 457, Part 1, Session 458, Part 1, Session 459, Part 1, Session 460, Part 1, Session 461, Part 1, Session 462, Part 1, Session 463, Part 1, Session 464, Part 1, Session 465, Part 1, Session 466, Part 1, Session 467, Part 1, Session 468, Part 1, Session 469, Part 1, Session 470, Part 1, Session 471, Part 1, Session 472, Part 1, Session 473, Part 1, Session 474, Part 1, Session 475, Part 1, Session 476, Part 1, Session 477, Part 1, Session 478, Part 1, Session 479, Part 1, Session 480, Part 1, Session 481, Part 1, Session 482, Part 1, Session 483, Part 1, Session 484, Part 1, Session 485, Part 1, Session 486, Part 1, Session 487, Part 1, Session 488, Part 1, Session 489, Part 1, Session 490, Part 1, Session 491, Part 1, Session 492, Part 1, Session 493, Part 1, Session 494, Part 1, Session 495, Part 1, Session 496, Part 1, Session 497, Part 1, Session 498, Part 1, Session 499, Part 1, Session 500, Part 1, Session 501, Part 1, Session 502, Part 1, Session 503, Part 1, Session 504, Part 1, Session 505, Part 1, Session 506, Part 1, Session 507, Part 1, Session 508, Part 1, Session 509, Part 1, Session 510, Part 1, Session 511, Part 1, Session 512, Part 1, Session 513, Part 1, Session 514, Part 1, Session 515, Part 1, Session 516, Part 1, Session 517, Part 1, Session 518, Part 1, Session 519, Part 1, Session 520, Part 1, Session 521, Part 1, Session 522, Part 1, Session 523, Part 1, Session 524, Part 1, Session 525, Part 1, Session 526, Part 1, Session 527, Part 1, Session 528, Part 1, Session 529, Part 1, Session 530, Part 1, Session 531, Part 1, Session 532, Part 1, Session 533, Part 1, Session 534, Part 1, Session 535, Part 1, Session 536, Part 1, Session 537, Part 1, Session 538, Part 1, Session 539, Part 1, Session 540, Part 1, Session 541, Part 1, Session 542, Part 1, Session 543, Part 1, Session 544, Part 1, Session 545, Part 1, Session 546, Part 1, Session 547, Part 1, Session 548, Part 1, Session 549, Part 1, Session 550, Part 1, Session 551, Part 1, Session 552, Part 1, Session 553, Part 1, Session 554, Part 1, Session 555, Part 1, Session 556, Part 1, Session 557, Part 1, Session 558, Part 1, Session 559, Part 1, Session 560, Part 1, Session 561, Part 1, Session 562, Part 1, Session 563, Part 1, Session 564, Part 1, Session 565, Part 1, Session 566, Part 1, Session 567, Part 1, Session 568, Part 1, Session 569, Part 1, Session 570, Part 1, Session 571, 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9.4. Greenshields Prize

N. Gartner

Discussed earlier.

9.5. Mid-Year Meetings

R. Bertini

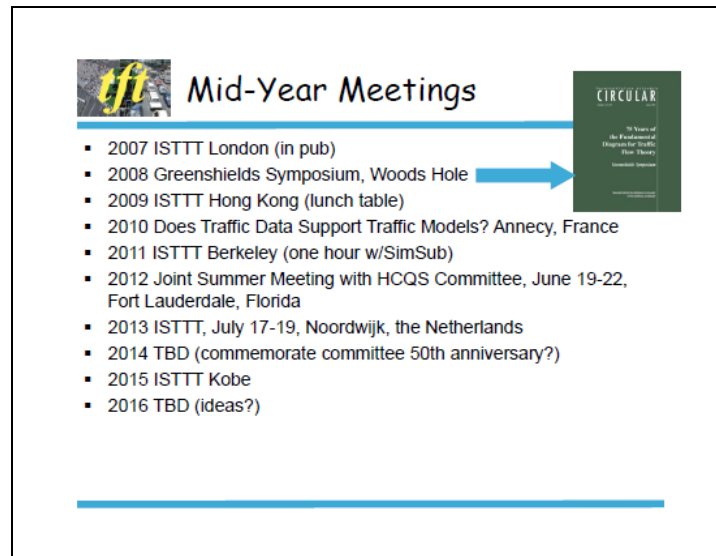
The 2010 mid-year meeting was held in Annecy, France.

The 2012 summer meeting will be held in Fort Lauderdale, FL.

A summer meeting in 2013 is proposed to take place at the 20th ISTTT in the Netherlands.

2014 TBD: Another Woods Hole type of symposium is anticipated.

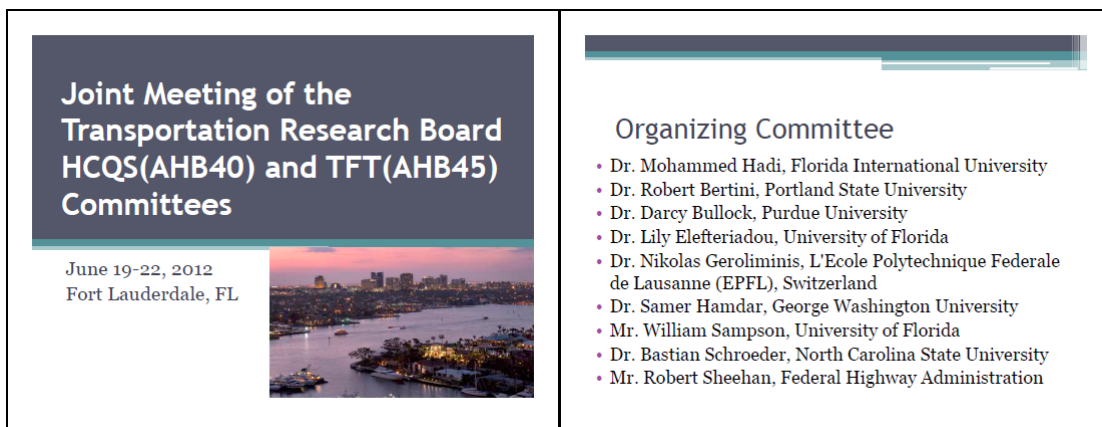
2016 TBD: An international venue is anticipated. The committee is looking for volunteers.



The slide features a title 'Mid-Year Meetings' with a blue horizontal line underneath. To the left is a 'tft' logo, and to the right is a book cover titled 'CIRCULAR: 50 Years of the Proceedings of the International Traffic Theory and Transport Conference'. A blue arrow points from the 2008 entry to the book cover. Below the title is a list of meetings from 2007 to 2016.

- 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 TBD (commemorate committee 50th anniversary?)
- 2015 ISTTT Kobe
- 2016 TBD (ideas?)

M. Hadi gave a presentation on the upcoming mid-year meeting, which will be a joint meeting with AHB40 HCQS Committee.



The slide is split into two columns. The left column has a dark blue header with white text: 'Joint Meeting of the Transportation Research Board HCQS(AHB40) and TFT(AHB45) Committees'. Below this, it says 'June 19-22, 2012 Fort Lauderdale, FL' and includes a photograph of a city skyline at night. The right column has a white background with a blue header: 'Organizing Committee'. Below this is a list of names and affiliations.

Joint Meeting of the Transportation Research Board HCQS(AHB40) and TFT(AHB45) Committees

June 19-22, 2012
Fort Lauderdale, FL

Organizing Committee

- Dr. Mohammed Hadi, Florida International University
- Dr. Robert Bertini, Portland State University
- Dr. Darcy Bullock, Purdue University
- Dr. Lily Elefteriadou, University of Florida
- Dr. Nikolas Geroliminis, L'Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland
- Dr. Samer Hamdar, George Washington University
- Mr. William Sampson, University of Florida
- Dr. Bastian Schroeder, North Carolina State University
- Mr. Robert Sheehan, Federal Highway Administration

Technical Program

- Tuesday (6/19) 8:30-12:00 Predictive traffic flow methodologies for ATDM Workshop
- Tuesday (6/19) 1:00 PM-5:00 PM: TFT and SimSub meetings and Workshop on Research Needs. HCQS workshops (two concurrent).
- Wednesday (6/20) 8:00 AM-5:00 PM Joint TFT/HCQS workshop discussion, Plenary sessions (two) and technical presentations - (Most likely two concurrent sessions)
- Thursday 8:00 AM - 5:00 PM- HCQS subcommittee meetings
- Friday 8:00 AM- 12:00 PM full HCQS committee meeting

Other Activities

- Dinner and River Cruise
<http://www.youtube.com/watch?v=3JxaRPUa8n8>
- Other activities and reception ??
- Lunch meeting of HCQS with ITE Gold Coast Chapter and the local chapter of WTS

Call for Extended Abstracts

- Call for extended abstract issued
- Web site for submittal set by TRB
<http://precis2.preciscentral.com/Public/UserLogin.aspx?P=D805325BAA88D2EA1FB38829735EDDB5&Reload=True&ID=4FDE8BDCA0F495A3>
- Few selected papers will be published in a special section of the ASCE Journal of Transportation Engineering
 - Full paper will be requested and reviewed after the meeting
- Deadline extended until February 15, 2012

Abstract Submission and Review

- Submittal Categories
 - Empirical modeling to support Capacity Analysis
 - Alternative Tools (Simulation)
 - Active Management/ITS Modeling
 - Performance Measurements
 - Others
- TRB needs from us
 - Date review start: 2/16
 - Date review end: 3/16
 - List of reviewers



Location and Hotel

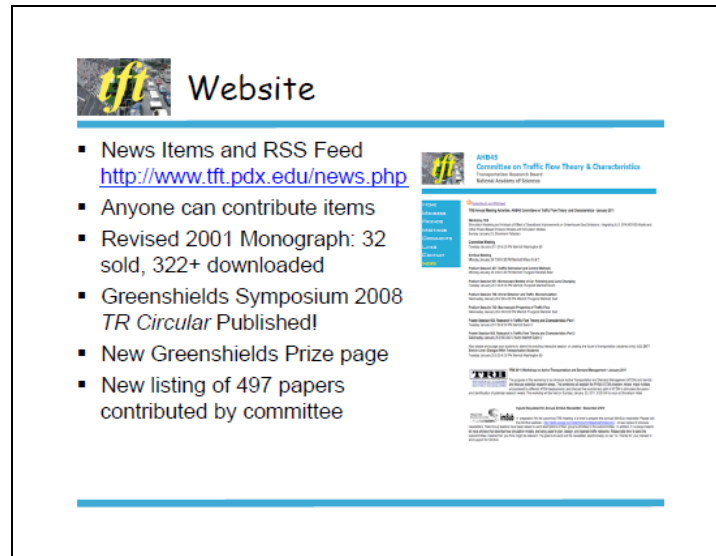
- Fort Lauderdale Beach Hilton Resort
- Across the road from Fort Lauderdale Beach, one of the most attractive beaches in Florida
- Restaurants and activities nearby
- Few minutes from Las Olas Boulevard and Downtown Fort Lauderdale
- 30 minutes from Palm Beach and 30 minutes from Miami downtown. About one hour from the Everglades National Park.

Hotel



9.6. Website [www.tft.pdx.edu]

R. Bertini



The screenshot shows the homepage of the Traffic Flow Theory (TFT) website. The header features the 'tft' logo and the title 'Website'. A blue horizontal line separates the header from the main content. On the left, there is a list of news items and RSS feed information. On the right, there is a sidebar with a 'tft' logo and the text 'AIRBIS Committee on Traffic Flow Theory & Characteristics Transportation Research Board National Academy of Sciences'. Below the sidebar, there is a 'TRB' logo and some text.

- News Items and RSS Feed
<http://www.tft.pdx.edu/news.php>
- Anyone can contribute items
- Revised 2001 Monograph: 32 sold, 322+ downloaded
- Greenshields Symposium 2008 *TR Circular* Published!
- New Greenshields Prize page
- New listing of 497 papers contributed by committee

9.7. TFT Historic Papers

E. Xuan

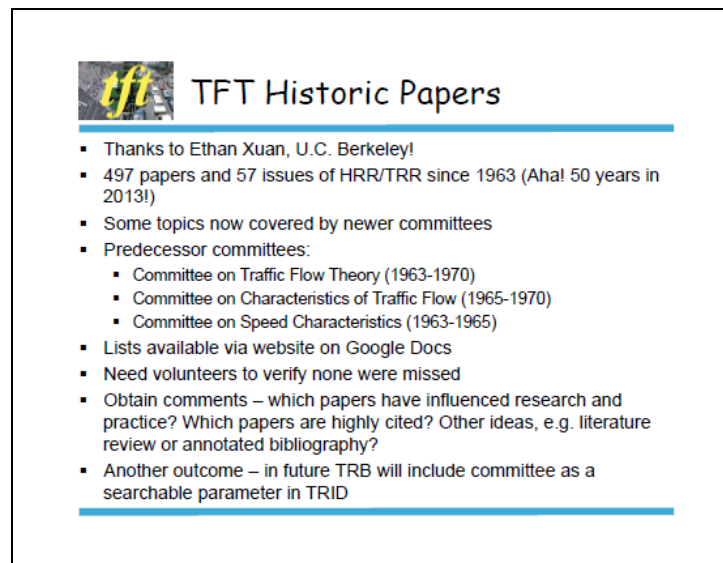
E. Xuan gave an update on the subcommittee activities to identify TFT Historic Papers. The subcommittee identified 497 TRR papers sponsored by the TFT committee.

R. Bertini and L. Leclercq suggested selecting 4-5 significant/classic papers out of the list.

H. Mahmassani commented that citations on the (selected) papers can be found using Google Scholar. The TRB library committee may also be able to help.

A. Skabardonis also suggested tracking citations of older papers.


It was suggested that best papers from the Annual Meetings should be presented at the TFT webinar.



The screenshot shows the 'TFT Historic Papers' page. The header features the 'tft' logo and the title 'TFT Historic Papers'. A blue horizontal line separates the header from the main content. The page contains a list of bullet points providing information about the historic papers and the committee's activities.

- Thanks to Ethan Xuan, U.C. Berkeley!
- 497 papers and 57 issues of HRR/TRR since 1963 (Aha! 50 years in 2013!)
- Some topics now covered by newer committees
- Predecessor committees:
 - Committee on Traffic Flow Theory (1963-1970)
 - Committee on Characteristics of Traffic Flow (1965-1970)
 - Committee on Speed Characteristics (1963-1965)
- Lists available via website on Google Docs
- Need volunteers to verify none were missed
- Obtain comments – which papers have influenced research and practice? Which papers are highly cited? Other ideas, e.g. literature review or annotated bibliography?
- Another outcome – in future TRB will include committee as a searchable parameter in TRID


9.8. Strategic Planning: 2011-2014 Triennial Strategic Plan R. Bertini



Strategic Planning


- Thanks to Marguerite Zarrillo and Avi Unnikrishnan
- Submitted draft Triennial Strategic Plan and awaiting comments
- Highlights
 - Primary Activities
 - Committee Membership and Management
 - SimSub
 - Traffic Flow Characteristics
 - Research Problem Statements
 - Communications and Outreach
- Think “products”
- Engage non-traditional partners/participants who can’t travel

9.9. Committee Communications S. Mattingly




TSP Review Comments


- Specific to our committee:
 - Post Annual Meeting webinars are excellent
 - Lacks organizational diversity—discuss steps to improve
 - Focus more on actions to be taken
- General Operations Section comments:
 - Very positive trends (level of activity, interaction with other committees, use of social media, midyear meetings, alternative meeting formats, international engagement, development of handbooks)
 - Need to update/expand research problem statements
 - Consider impact of new technology or outside activity on mission
 - Consider Best Young Member Paper Award
- “Keep up the good work!”



Committee Communications

- TFT Facebook Page: 242 “Likes”
- Student Interest Group: 38 members
<http://tftcsig.ning.com/>





Facebook Update

- Total number of persons who have liked the page so far: 242 (from more than 20 countries)
- Female: 19%/Male: 76%
- Most of the fans are in the range of 25-34 years old!

The top 5 countries where people have liked us from are the U.S., Greece, Netherlands, India, and United Kingdom. The page has been viewed 50 times per day on average. Every content of the page (a posted item) reaches about 150 persons on average.

Gender and Age*

Female	19%	0.42%	0.3%	0.1%	0.25%	0.1%	0.03%
Male	76%	0.43%	0.5%	0.7%	0.7%	0.5%	0.03%

Countries*

127	United States of America
11	Greece
8	Netherlands
7	India
7	United Kingdom
5	Italy
5	Randakrish
5	Australia
4	Japan
4	Germany
	Jerico
	Algeria
	Spain
	Belgium
	Austria
	South Korea
	Holland
	China

Nominations for the best young member paper award can be handled by the Greenshield’s award committee

9.10. Classic Papers

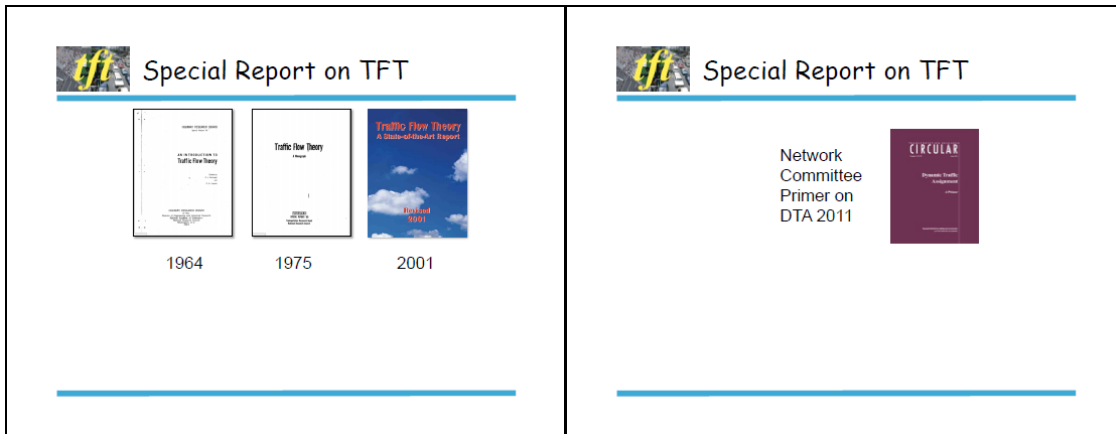
S. Ahn, J. Laval & N. Geroliminis

All ISTTT papers were identified by Eric Gonzales and Vikash Gayah.

9.11. Special Report on Traffic Flow Theory H. Mahmassani

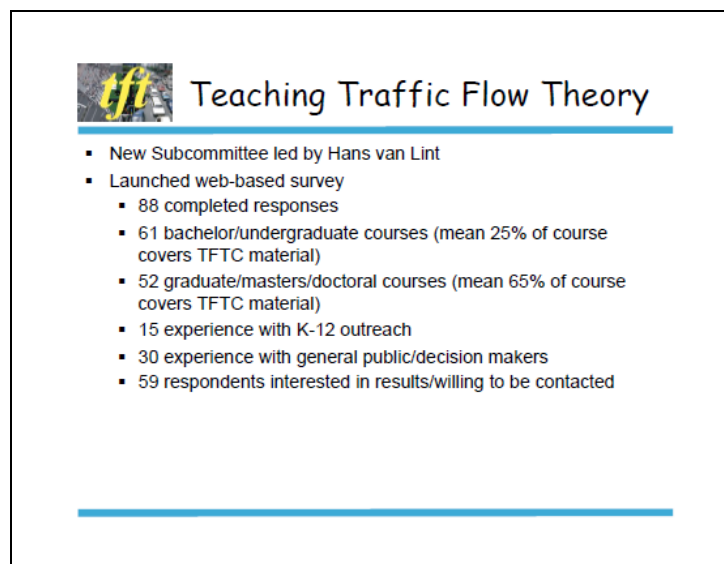
TRB Circular on Network Committee Primer on DTA 2011 is published.

Traffic Flow Theory Monograph: The chapter for microscopic models is in need of revisions. The Simulation Subcommittee can lead this effort and include the methodological aspect of micro-simulation. A. Skabardonis will help H. Mahmassani on this effort.




9.12. NEW Subcommittee on Teaching Traffic Flow Theory H. van Lint

The Subcommittee on Teaching Traffic Flow Theory is led by H. van Lint. The Subcommittee launched web-based survey, and H. van Lint presented the preliminary survey results. H. van Lint, E. Wilson, and C. Buisson gave presentations on their efforts to teach traffic flow theory.




H. van Lint gave a presentation on various experiments to explain traffic flow theory and control, which is available on the TFT Facebook.

 <p>AHB45 Committee on Traffic Flow Theory & Characteristics Transportation Research Board National Academy of Sciences</p> <p>The Promotion & Education of the TFT domain to students, road authorities, politicians and the broad Public using fun and cool methods Subcommittee</p> <h2>THE TFT PEP-SUB</h2> <p>(OTHER ACRONYMS WELCOME!)</p>	 <h3>Panel discussion to kick of the TFT -PEPSub</h3> <p>Panel:</p> <ul style="list-style-type: none"> • Hans van Lint (TUD) – <i>DIY experiments to teach traffic control</i> • Hani Mahmassani (NWU) – <i>Convincing policy makers</i> • Christine Buisson (IFFSTAR) – <i>Teaching TFT methods</i> • Eddie Wilson (USouthampton) – <i>Play, learn, appreciate!</i> <p>Planning</p> <ol style="list-style-type: none"> 1. 5 minute pitch each 2. Discussion across the table. Example discussion points: <ol style="list-style-type: none"> a. Systematically sharing (methods, ideas, slides, material) in TFT community? b. Workshop / conference (session) on this subject? <p>1/20/12 TFT-PEPSub Panel discussion 48</p>
 <p>A route choice experiment why free individual choices may lead to worse traffic than "guided" choices!</p>  <p>Route 1 Route 2 Route 3</p>  <p>The walking experiment why ramp metering (and perimeter control in general) is a good idea</p>  <p>Rice through a funnel experiment demo's the capacity drop, but also the faster is slower evacuation effect!</p>	 <h3>The Walking Experiment</h3> <p>A closed reservoir system (only way out is through)</p>  <ul style="list-style-type: none"> • Assume that a fixed total demand D (#travelers/hour) wants to travel through this network. • the only way out is through the ring road ... • Every person has a simple task: walk X rounds and then leave <p>1/20/12 TFT-PEPSub Panel discussion 50</p>
 <p>Walking Experiment Designer</p> <p>Simulation time: 160.2 (of 420.0) secs [N: Ped: 20]</p> <p>Empty Start Stop</p> <p>Circuit dimensions Length straight: 15 (m) Radius: 10 /pi (m) Length circuit: 50.0 (m) Location offramp: 35.0 (m)</p> <p>Pedestrians Stopping distance: 1 (m) Free speed: 43.6 (m/s) Noise: 0 (%)</p> <p>Simulation Total time: 7 (mins) H (lidemand): 6 (speed) Outflow: 3 (N rounds) Outflow selection method: 1...N, 1...N, ... N,N, ... GUI Update: 1 (s)</p> <p>Ramp metering <input type="checkbox"/> Ramp metering enabled Num vehicles > Nc: [] Vc: 0.76 (free speed) Nc: 0.5 (stop. dist)</p> <p>Results Name: Run 1 <input type="checkbox"/> Clear cumulative curve plots Save data</p>	 <h3>Experiment A: let nature take its course ...</h3> 

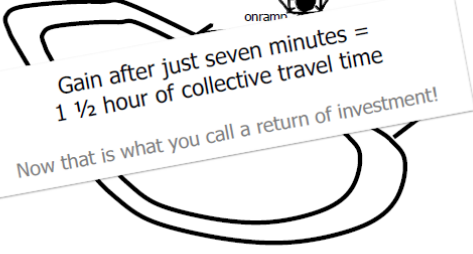


Experiment B: ramp metering




Gain after just seven minutes =
1 1/2 hour of collective travel time

Now that is what you call a return of investment!



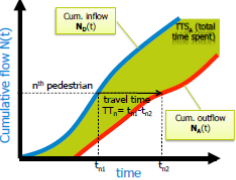
1/20/12 TPT-PEPSub Panel discussion 55



Explanation of the results


This is how we compare the two situations

- Consider the cumulative inflow $N_B(t)$ and the cumulative outflow $N_A(t)$
- The horizontal distance between the curves equals the travel time
- The surface between $N_B(t)$ and $N_A(t)$ = the sum of all these travel times, the *total time spent* (TTS_A)



The smaller TTS the better!

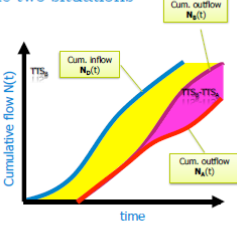
1/20/12 TPT-PEPSub Panel discussion 56




Explanation of the results

This is how we compare the two situations

- In experiment B we had exactly the same cumulative demand $N_B(t)$ but a different cumulative outflow $N_A(t)$. Again the surface between these depict *total time spent* (TTS_B)
- If we plot also $N_A(t)$ in the same graph, the surface between $N_B(t)$ and $N_A(t)$ obviously equals the difference in total time spent, that is:
Performance = $TTS_B - TTS_A$

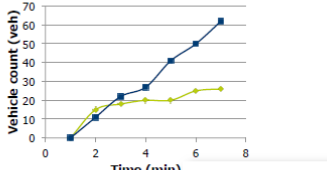


1/20/12 TPT-PEPSub Panel discussion 57



Explanation of the results

Cumulative outflow curve



$TTS_B - TTS_A = 89$
Person minutes
(1 1/2 person hours)

Which is equal to (depending on the average value of one person hour) a bottle of (pretty good) wine

k	n	arr (min)	depart (aantal)	CUM. IN (aantal)	CUM. OUT (aantal)	TTS-TTB (min)
1	1	0	0	0	0	0
2	1	15	11	11	11	4
3	1	3	5	16	16	-4
4	1	2	9	20	27	-7
5	1	0	14	20	41	-21
6	1	3	9	25	50	-25
7	1	1	11	26	61	-35
			38	62	124	-62

1/20/12 TPT-PEPSub Panel discussion 58




You even make it to Belgian national TV (live)!

Many thanks to Chris Tampere!




1/20/12 TPT-PEPSub Panel discussion 59

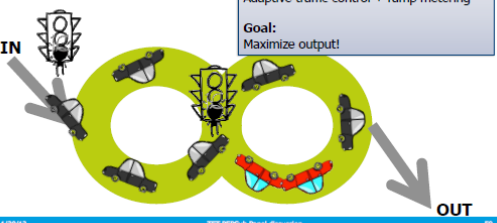


More advanced experiments

Can we also demonstrate that **coordination** is a GREAT IDEA ???





Possible scenarios:
 Fixed traffic control
 Fixed traffic control + ramp metering
 Adaptive traffic control + ramp metering

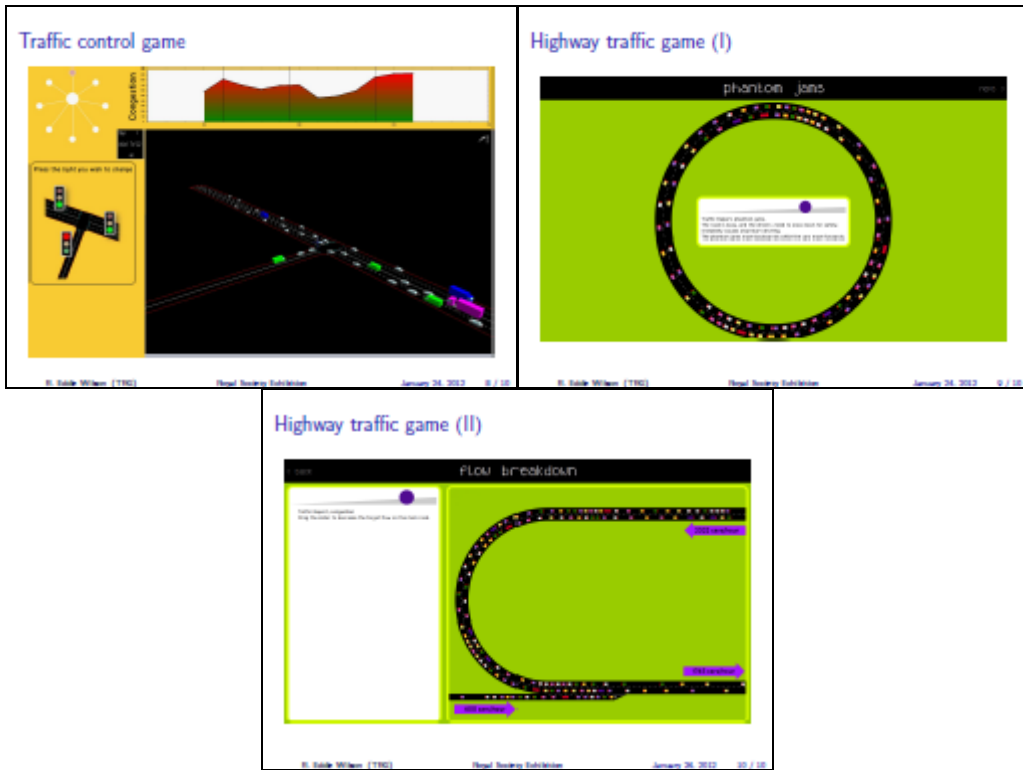
Goal:
 Maximize output!





1/20/12 TPT-PEPSub Panel discussion 60


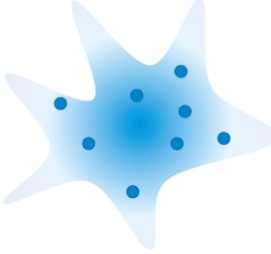
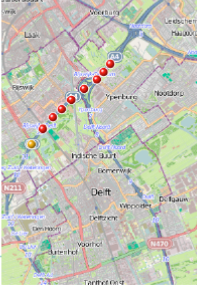
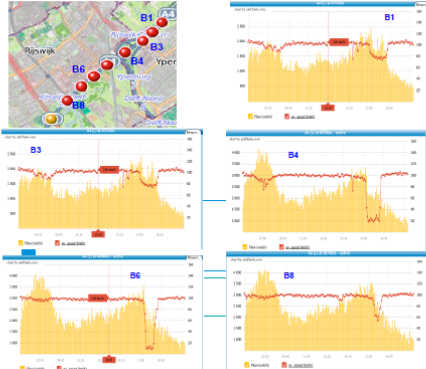
E. Wilson gave a report and presentation on the Royal Society Summer Science Exhibit. The website (<http://invisible-referee.soton.ac.uk/>) is also available on the TFT Facebook site.

<p>21st Century Traffic Control: the Invisible Referee Public Exhibition, July 2011 http://invisible-referee.soton.ac.uk/</p> <p>R. Eddie Wilson Transportation Research Group University of Southampton</p> <p>January 24, 2012</p>	<p>TRG at the Royal Society Summer Science Exhibition</p> <p>► Our exhibit: 21st Century Traffic Control: the Invisible Referee <i>Much of the UK road network is monitored by space-age Control Offices. These are the invisible 'referees' that aim to smooth traffic flow, for example, by varying the timings of traffic lights. Our research is in Mathematical models that are used to predict how traffic jams build up - and how we should program Control Office computers to keep the traffic flowing freely. At our exhibit you will explore the world of such Intelligent Transport Systems. You will 'take the controls' in interactive computer games and discover if you can smooth the traffic better than us!</i></p> <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 2 / 10</small></p>
<p>TRG at the Royal Society Summer Science Exhibition</p> <p>► Our exhibit: 21st Century Traffic Control: the Invisible Referee <i>Much of the UK road network is monitored by space-age Control Offices. These are the invisible 'referees' that aim to smooth traffic flow, for example, by varying the timings of traffic lights. Our research is in Mathematical models that are used to predict how traffic jams build up - and how we should program Control Office computers to keep the traffic flowing freely. At our exhibit you will explore the world of such Intelligent Transport Systems. You will 'take the controls' in interactive computer games and discover if you can smooth the traffic better than us!</i></p> <p>► Three simple messages:</p> <ul style="list-style-type: none"> ► Traffic jams are a bad thing. (They cost money and carbon). ► There is such a thing as traffic control. ► Maths and computing help you do it better. <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 2 / 10</small></p>	<p>The three activities:</p> <div style="border: 1px solid #ccc; padding: 10px;"> <p>Scalextric Our track has one big difference - 8 light traffic lights! How can you win? You have to learn how to "take the controls" by looking forward to detect when to accelerate the traffic lights.</p> <p>Junction Control How well can you control the traffic lights? Can you beat the computer? Can you post the high score? Keep the traffic running smoothly to keep delays and pollution to a minimum.</p> <p>Highway Control Have you experienced a "phantom" jam? You reach the front of the queue and then something else happens. Can you stop "flow breakdown" and keep the cars moving freely?</p> </div> <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 3 / 10</small></p>
<p>Our exhibit ...</p>  <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 4 / 10</small></p>	<p>Big crowds ...</p>  <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 5 / 10</small></p>
<p>A little bit of lobbying ...</p>  <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 6 / 10</small></p>	<p>Small kids having fun on the Scalextric</p>  <p><small>© Eddie Wilson (TRG) Royal Society Exhibition January 24, 2012 7 / 10</small></p>



C. Buisson gave a presentation on her effort to teach traffic flow theory.

 <p>How to teach? Especially traffic flow theory? A personal point of view</p> <p>January 2012, TRB, Traffic Flow and Characteristics Committee Christine Buisson</p>	<p>What is the situation? (1/2)</p> <p>Students (specially in France) think that:</p> <ul style="list-style-type: none"> ▶ Any question has an answer ▶ The answer is unique and rationally arguable ▶ The teacher (or at least someone else) knows the answer. 
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<p><u>What is the situation? (2/2)</u></p> <p>Usually in real professional life,</p> <ul style="list-style-type: none"> ▶ The question is not corresponding exactly to the problem, it is necessary to reformulate it, ▶ The answer is not unique, or may not exist, ▶ The choice of the answer is subjectively made, ▶ The arguments for the choice are not all quantified. ▶ If you give a rapid answer to a unclear question, the solution may create catastrophes. 	<p><u>Problems are usually not well defined</u></p>  <ul style="list-style-type: none"> ▶ But there is inside some real parts of knowledge: <ul style="list-style-type: none"> ▶ Q/K/V ▶ Fundamental diagram ▶ Congestion propagation ▶ Cumulative vehicle curves ▶ LWR model ▶ Use of simulation ▶ ... ▶ And its our responsibility to allow our students to use them as a starting tool box
<p><u>An example of teaching a knowledge (thanks to Céline Parzani)</u></p> <ul style="list-style-type: none"> ▶ An exercise for undergraduate students about <ul style="list-style-type: none"> ▶ the congestion propagation and ▶ the use of loop detectors data ▶ Use of regiolab data (offered by TU Delft – thank you) <ul style="list-style-type: none"> ▶ Loop data from A4 NL ▶ December 19 2011 6:00-21:00 	

Two main messages and two questions

- ▶ We have to teach
 - ▶ the complexity
 - ▶ some precise knowledge
- ▶ We may share exercises and syllabus for the basic knowledge because we all have this in common

- ▶ Where to post the sharable teaching resources?
- ▶ How to organize this and who will?

10. Webinars

J. Laval

J. Laval gave an update on TFT Webinars. It was suggested that the webinars should be expanded for outreach to public agencies. H. Mahmassani commented that only simple facts can be communicated to the decision makers to maximize benefits. The TFT Committee can take a role in developing a simple, compelling tool for better technology transfer (e.g., capacity drop, phantom jam, marginal cost, value of responsiveness, grid lock, reliability, fallacy of averages, etc.).

D. Chen and M. Saberi are leading the effort to involve students. D. Chen gave a presentation on the TFT webinars.


The 91st TRB AHB 45 Committee Meeting

TRAFFIC FLOW WEBINARS

Jorge A. Laval
Danjue Chen

Introduction

- ❖ Established in May 2010 by Dr. Jorge A. Laval.
- ❖ To share latest research & practice.
- ❖ 307 members from over 20 countries.
- ❖ A traffic flow webinar group
<http://groups.google.com/group/traffic-flow-webinars?hl=en>
- ❖ Traffic flow webinar website
<http://www.webinars.jltraffic.com/>

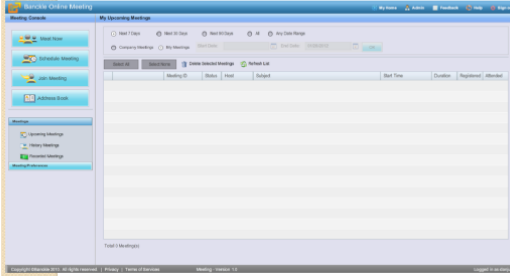


Introduction

- When?
 - I am (ET) every Friday.
- Who will present?
 - scholars, students, consultants, etc.
- Audience?
 - scholars, students, consultants, engineers, government officer(?), etc.
- Where?
 - <http://banckle.com/>

How it works?

<http://banckle.com/>



How it works?

Audience:


- Subscribe to the webinar group.
- Join the webinar through webinar link.
- Interact with the presenter. Have fun!



Presenter:

- Schedule a webinar.
- Prepare materials (slides or pdf file).
- Join the webinar.
- Present, interact with audience.

Activities

- Regular invited webinars
- TRB AHB 45 webinars
- 19th ISTTT webinars
- Traffic flow mid-year meeting live webinars



<p>Activities Have completed over 30 webinars!</p> 	<p>To be improved</p> <ul style="list-style-type: none"> ❖ Time: AM? PM? Friday? ❖ Access <ul style="list-style-type: none"> □ webinar subscription □ Facebook □ Twitter? ❖ Feedback ❖ Interaction ❖ More diverse topics? Mixed traffic?
<p>Plan in 2012</p> <ul style="list-style-type: none"> ➢ 19th ISTTT ➢ Mid-year meeting (live webinar?) ➢ TRB AHB 45 ➢ Special series? <p style="text-align: center;">Advice ?</p>	<p> Webinars</p>  <p>GA Tech Traffic Flow Webinars www.webinars.jltraffic.com/</p> <p>25 Archives http://www.webinars.jltraffic.com/video-archives</p>

11. Liaison with other Committees


All Attendees

Network Modeling Committee: There is need to analyze transient state.

Freeway Operations Committee: driver behaviors, simulations; international meeting, opportunity to collaborate

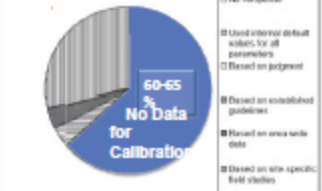


12. International Liaison

International members and attendees

 **International Liaison**

▪ NEARCTIS	W. Daamen
▪ MULTITUDE	V. Punzo
▪ MOCOPo Website	C. Buisson

V. Punzo gave a presentation on MULTITUDE.

<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <p>COST Action TU0903 Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <p>MULTITUDE www.multitude-project.eu</p>	<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>Motivation</h2> <ul style="list-style-type: none"> Traffic simulation now widespread How much can/should we trust our results and conclusions ? <ul style="list-style-type: none"> the same simulation study carried out by different people can give different results Trustworthiness of the results, depends on the ability of users Correct use is a difficult task even for experts
<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>State of the Art</h2> <p>"If you have used micro simulation tools, what calibration and/or validation procedures did you apply?"</p> <p>"Guidance for the Use of Alternative Traffic Analysis Tools in Highway Capacity Analysis"</p> <p>National Cooperative Highway Research Program (NCHRP 3-46), TRB, 2007.</p>  <ul style="list-style-type: none"> No Response Used universal default values for all parameters <ul style="list-style-type: none"> Based on judgment Based on established guidelines <ul style="list-style-type: none"> Based on area wide data Based on site specific field studies 	<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>What is starting to happen...</h2>  <p>After £1.5m is spent on M56, it will take £3.8m to put it right ..</p>
<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>The Parable of the Blind Leading the Blind</h2> <p>BRUEGEL, Pieter the Elder, Museo Nazionale di Capodimonte, Napoli</p> 	<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>The Purpose of the COST Action</h2> <ul style="list-style-type: none"> Focus Research issues, bring together existing strands of work & activities 'The sum is greater than the parts' 2-3 Working Meetings per year + Annual meeting <ul style="list-style-type: none"> 2011: Naples, Stockholm, Ispra. 2012: London, Riga +... Training school (early stage researchers and practitioners) with NEARCTIS: <ul style="list-style-type: none"> Spring 2011, Delft. Summer 2012 @ JRC + 2013?
<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>1. Review of traffic simulation practice and research</h2> <p>Hoogendoorn, Daamen & Buisson</p> <p>TU Delft</p> <p>ENTPI</p> <ul style="list-style-type: none"> Task 1.1. Survey of the usage of traffic simulation tools - FINISHED Task 1.2. Review of traffic data collection and estimation techniques - FINAL STAGES Task 1.3. Review of methodologies for traffic model estimation, calibration and validation - FINAL STAGES 	<p>MULTITUDE Methods and tools for supporting the Use, caLibration and validation of Traffic simUlations moDEls</p> <h2>1.1 State of the Art + Survey of Simulation Tools</h2> <ul style="list-style-type: none"> State of the Art Modelling report - COMING SOON. 'Snapshot' of how we work, what we work on, what we understand, what we do. <ul style="list-style-type: none"> Web survey, Q4 2010, 215 responses 2/3 use 'the big 3' Warm up time, number of runs, types of data etc.. 63% found NOT to be performing calibration, or were doing so intuitively, without using guidelines. Paper 12-2606 Session 807, Thursday <ul style="list-style-type: none"> Possible re-launch to (re)investigate key questions.

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Methodological support for the calibration and validation of traffic simulation models

2. Highway modelling
Ciuffo, Farah & Wagner

EUROPEAN COMMISSION
Joint Research Centre

Task 2.1. Exchanging and sharing advanced traffic datasets

Task 2.2. Defining contents, quality and estimation techniques for advanced traffic datasets

Task 2.3. Understanding the role and impact of parameters on model outputs

Task 2.4. Developing techniques for highway model estimation and validation

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Sharing and Exchanging Data Sets

- Prepare data directory – summary of data useful for modelling. Projects with:
 - USEFUL AND AVAILABLE DATA
 - EuroFOT, 100-Car naturalistic driving study, 6m²
 - POTENTIALLY USEFUL DATA
 - ICC FOT, DeCoSa, Play As You Speed, Acti, CHDS, SHRP2
 - USEFUL DATA BUT NOT AVAILABLE
 - TeleFOT, PROLOGUE, SHRP2

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Sensitivity Analysis

- Global sensitivity analysis – family of theories and techniques aimed at defining how the uncertainty in the model outputs can be apportioned to the different sources of uncertainties in the model input
- Application of may provide considerable benefits for models comprehension and also for their calibration
- May play an important role to uncover technical errors in the model, to identify critical regions in the space of the inputs, to simplify models etc.

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Methodological support for the calibration and validation of traffic simulation models

Summary of the studies (1)

Models Involved

- 3 microscopic models (MITSIM, VISSIM, AIMSUN)
- Several car-following models (IDM, Gipps, etc.)
- 1 mesoscopic model (AIMSUN meso)
- 1 macroscopic model (SYMUVIA)

Simulated scenarios

- 1 urban scenario (City of Zurich)
- 1 mixed scenario (City of Genova)
- 1 freeway scenario (A44 Freeway in Portugal)
- 5 types of toy networks (roundabout, signalized intersection, give-way intersection, on-ramp, weaving section)

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Summary of the studies (2)

Inputs Involved

- model parameters (for most of the cases)
- traffic demand (for 1 case study and foreseen on other case studies)

Sensitivity analysis approaches

- Variance based approach (most of the cases)
- Meta-modelling based approach (1 scenario)
- Elementary effect approach (for 1 scenario)
- Derivative-based approach (in 1 scenario)

Aim of the studies

- Factor fixing (model simplification)
- Factor prioritization (model analysis)

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Calibration of traffic simulation models

Exploratory study to compare the different optimization settings applied so far in the literature for the calibration of microscopic traffic flow models

2 case studies:

- calibration of a traffic simulation model (AIMSUN) against aggregate measure in a freeway context
- calibration of a car-following model (the Gipps' model) against trajectory data in both an urban and a highway scenario

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Objectives of the studies

Main objective

Understanding if the common settings applied so far in the field literature are really able to provide reliable calibration results

Further objectives

Understanding the impact on calibration results of different

- Measures of performance
- Measures of goodness of fit
- Optimization algorithms

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3. Network modelling
Barcelo, Liu & Antoniou


UNIVERSITY OF LEEDS

Task 3.1. Exchanging and sharing standard traffic datasets

Task 3.2. Defining contents, quality and data reduction techniques for standard traffic datasets

Task 3.3. Developing techniques for network model calibration, validation and O/D matrix refining


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Multi-centre modelling for the evaluation of traffic simulation tools



Benchmarking OD estimation and prediction approaches

- Develop a common framework for the benchmarking of OD estimation and prediction algorithms
 - Matlab based script and interfaces to AIMSUN
- OD estimation algorithms
 - Non-linear Kalman filter extensions
 - LSQR, Simultaneous GLS, SPSA variants ...
- Will be tested on common scenarios


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Scenarios setup

- OD Interval
- Simulation duration
- Algorithm (previous slide)
- Demand profiles
- Network
- Coverage of the network by sensors
- Quality of historical information
- Quality of surveillance data
- MOEs/goodness of fitness measures


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Planning and next steps


- 13 January 2012: experimental design finalized
- End January 2012: Interfaces with AIMSUN operationalized in script
- February-May 2012: execution of simulation experiments
- May 2012: Meeting In London / preliminary results presented / Issues resolved
- June 2012: simulation results available


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4. Synthesis, dissemination and training


Brackstone & Antoniou 

 Task 4.1. Harmonizing approaches and outputs

 Task 4.2. Guidelines and best practice manual for model calibration and validation – Concludes Spring 2013

 Task 4.3. Training end users to the correct use of traffic simulation tools – Series of Training Schools


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Guidelines

- Subgroup to examine existing guidelines, compile roadmap, undertake gap analysis
- Validation by Questionnaire
- Stakeholder workshops – Government + Consultants
 - UK (Feb.) + DE (Feb.) + NL (March) + FR
- End-user outreach and education
 - Summer 2012 onwards
 - Countries where simulation is not so well understood/regulated.


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Summer School on "Assessment of ITS Solutions"

- Location: *European Commission Joint Research Centre, Ispra, Italy*
- Period: *June 6-8, 2012*
- Evaluation of ITS measures, core methodologies for the quantification of the impacts, multi-criteria analysis and uncertainty management.
- Three case studies
- Practicum in the afternoons
- Sponsors: MULTITUDE, NEARCTIS, EC JRC - IET
- Organizers: Vincenzo Punzo (JRC), Christine Bulson (IFSTTAR), Winnie Daamen (TUDelft)
- Draft program at www.multitude-project.eu/its-school



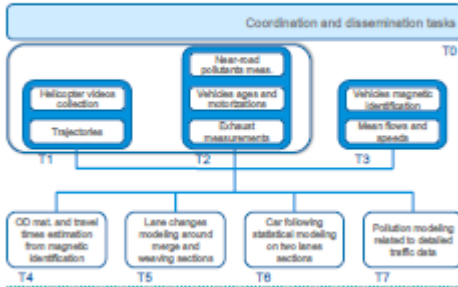

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Multi-centre modelling for the evaluation of traffic simulation tools



Questions?

<ul style="list-style-type: none"> • General + Summer School <ul style="list-style-type: none"> - Vincenzo Punzo - vincenzo.punzo@jrc.ec.europa.eu • Surveys & Reviews <ul style="list-style-type: none"> - Winnie Daamen - W.daamen@tudelft.nl • Data sets <ul style="list-style-type: none"> - Hansen Farsch - Hansen.farsch@abe.kth.se • Sensitivity analysis <ul style="list-style-type: none"> - Biagio Cluffo - biagio.cluffo@jrc.ec.europa.eu 	<ul style="list-style-type: none"> • Network Modelling <ul style="list-style-type: none"> - Jaume Barcelo - Jaume.barcelo@upc.edu • OD Estimation <ul style="list-style-type: none"> - Costas Antoniou - Antoniou@central.ntua.gr • Guidelines + Mailing list <ul style="list-style-type: none"> - Mark Brackstone - Mark.brackstone@iom.ac.uk <p style="text-align: center;">www.multitude-project.eu</p>
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C. Buisson gave a presentation on the status of MOCOpo.

 <div style="border: 1px solid black; padding: 5px; margin-top: 20px; text-align: center;"> <p>MOCOpo: status of data collection tasks in January 2012</p> <p>January 2012 MOCOpo team</p> </div>	<h3>MOCOpo: Some facts</h3> <ul style="list-style-type: none"> ▶ A project funded by the French Ministry of Transportation (350 k€) ▶ Dates: <ul style="list-style-type: none"> ▶ Beginning: January 2011 End: December 2013 ▶ First year: Measurements Second and third years: Modeling enhancements ▶ 6 partners <ul style="list-style-type: none"> ▶ IFSTTAR (Lyon, Paris, Nantes), ▶ INRA (Grenoble), ▶ French Ministry of Transportation (Grenoble, Lyon, Angers) ▶ Association of Pollution Measurement ASCOPARG (Grenoble), ▶ CERIA (Paris) ▶ ENTPE ▶ and more than 30 individuals ▶ A joint data collection project: PM-Drive devoted only to high precision pollution measurements led by Aurélie Charon (LTE-IFSTTAR) with the involvement of additional partners: LOGE (Grenoble), LCP (Marseille), LCM (Chambery)
<h3>MOCOpo: global objectives</h3> <ul style="list-style-type: none"> ▶ Collect data on a simple and congested highway <ul style="list-style-type: none"> ▶ The RN87 in South of Grenoble about 10 km long; ▶ A 2x2 lanes highway ▶ Simultaneously collect <ul style="list-style-type: none"> ▶ Trajectories on 3 zones ▶ Pollutants along the road ▶ On-road traffic data ▶ Thus, allowing better modeling 	
<h3>Global organization</h3> 	 <div style="display: flex; justify-content: space-between;"> <div data-bbox="852 1197 1079 1470"> <h4>Trajectories data collection</h4> <ul style="list-style-type: none"> ▶ Helicopter placed above a congested 2 lanes ring highway at 500 m height ▶ Monday to Friday in 3 zones <ul style="list-style-type: none"> ▶ A merge ▶ A standstill section ▶ A weaving section (2 entrances, 3 exits) ▶ HD image: 2500 pixels corresponding to 500 m ▶ High frequency photographs (more than 20/s) ▶ Digitalization of trajectories with the help of the TU Delft code ▶ 2 lateral cameras allowing input and output detailed flow measurements ▶ More than 7 hours of trajectories will be made available to the community </div> <div data-bbox="1096 1197 1323 1470"> <h4>Pollution measurements</h4> <ul style="list-style-type: none"> ▶ 3 locations along the highway with various congestion levels ▶ 1 location inside the city to define the urban background ▶ 4 periods of two weeks during year 2011 <ul style="list-style-type: none"> ▶ Winter/ spring/ summer/ fall ▶ Various pollutants <ul style="list-style-type: none"> ▶ NO_x NO₂ PM₁₀ PM_{2.5} CO/ SO₂/ O₃ ▶ Weather data: wind speed, temperature ▶ Date frequency of 15' ▶ 6' traffic data on 6 sites <ul style="list-style-type: none"> ▶ Mean flow, speed and occupancy rates </div> </div> <p style="text-align: center; color: blue;">go to mocopo.ifttar.fr and be kept informed</p>

Three cameras for a complete measurement

- ▶ Camera 1
 - ▶ 2500*1000 pixels
 - ▶ More than 20 images/second
- ▶ Cameras 2.1 and 2.2
 - ▶ To determine upstream and downstream flows

Height of the helicopter: 500m

camera 1: 500 m

camera 2.1: 700 m

camera 2.2: 700 m

Summary: 7 h 10 of potentially perfect data and 8 h 40 of analyzable data

	Zone 1 - merge 060 (h40)		Zone 2 - standard section 030 (h10)		Zone 3 - weaving section 060 (h60)	
	duration	timeperiod	duration	timeperiod	duration	timeperiod
Mon 0	05	060 - 030			05	060 - 030
Tue 0	05	No image of camera 2) downstream 030 - 030	40	Merge of camera 2) downstream 040 - 030		
Wed 0	40	Video check and data collection at 400m	15	030 - 040	40	060 - 030
Thur 0	05	030 - 030	30	030 - 040	40	060 - 030
Fri 0	40	030 - 030	05	030 - 030	40	060 - 030

In global, more than 20,000 vehicles will be precisely observed along 500 m

Video analysis

Digitalization made with the help of a software developed by TU Delft

3 steps

- ▶ Stabilization
- ▶ Determination of the objects moving from one image to another
- ▶ Building up the vehicles trajectories from one image to another

Pollution data are already on the web site

One hour of trajectories data should be soon available and progressively all the trajectories dataset

We hope you will enjoy using them!

<http://mocopo.ifsttar.fr>

13. Announcements and Future Meetings

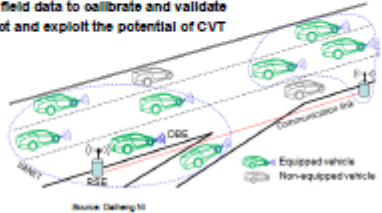


All Attendees

Announcements/Future Meetings


- Midyear Meeting Fort Lauderdale
- 1st European Symposium on Quantitative Methods in Transportation Systems (LATSIS): September 4-8, 2012
- ISTTT20 July 17-19, 2013, Noordwijk, the Netherlands
- NCHRP Synthesis topics (13) due February 17, 2012 (www.trb.org/Studies/Synthesis/SynthesesSubmittal.asp)
- Others

The TFTC Midyear Meeting will take place in Fort Lauderdale.

data for connected vehicles, naturalistic driving data, Turner Fairbank data, and naturalistic data part of MULTITUDE.

<h3>Thoughts on Triennial Strategic Plan</h3> <p>In addition to missions mentioned in Committee Future Outlook Statement (CFOS), TFTC committee should</p> <p>serve as the knowledge base of traffic flow theory for today and tomorrow in this rapid changing world</p> <p>and</p> <p>the guidance of application of the knowledge to transform our transportation systems.</p> <p><small>A few example directions of thrust are provided below to invite further thinking</small></p>	<h3>Directions of Thrust - Theory</h3> <ul style="list-style-type: none"> ⇒ Connected Vehicle Technology <ul style="list-style-type: none"> ➢ Cyber-physical integration in transportation ➢ The paradigm is shifting ➢ Need new theories/models to represent ➢ Need field data to calibrate and validate ➢ Predict and exploit the potential of CVT  <p><small>Source: Deloitte US</small></p>
<h3>Directions of Thrust - Application</h3> <ul style="list-style-type: none"> ⇒ Simulation-Aided Highway Design <ul style="list-style-type: none"> ➢ Respond to outreach by ??? last year ➢ Test highway design by running vehicles on the roadway ➢ Need to model driver, vehicle, roadway separately ➢ Yet each is an entity of an integral system ➢ Need 2- to 3-dimensional traffic flow model ➢ Currently we only have 1- or 1.5-dimensional models  <p><small>Source: shirad.com</small> <small>Source: Polytechnic.com</small></p>	<h3>Directions of Thrust - Data</h3> <ul style="list-style-type: none"> ⇒ Next NGSIM?? <ul style="list-style-type: none"> ➢ Field data is critical to theory of connected vehicles ➢ Many federally funded testbeds and pilot projects ➢ Would it be possible to make the data publicly available? ➢ Just like NGSIM which has catalyzed development of TFT ➢ TFTC committee needs to be proactive and take the lead  <p><small>Source: idt.gov</small> <small>Source: idt.gov</small></p>

For the 2013 Annual Meeting call for papers, there is possibility to coordinate with the ITS Committee. Papers will be due in the beginning of May. In terms of process, preference is to publish papers through TR-C (special issue) and presentation at TRB (not included in the proceedings).



New Business

- 2013 Annual Meeting Call for Papers
 - Last year some discussion of joint calls related to International and Mixed Traffic
 - Christine Buisson: Cooperative traffic management: theory and practice (w/ITS committee)
 - Other ideas?
- "Future Products"
- TU Delft Simulation Experiment: H. van Lint and colleagues

H. van Lint gave a presentation on the simulation experiment at TU Delft.

Announcement
3D Multi-User Virtual Experiment
TU Delft & National Institute Informatics (NII, Tokyo)
1/30/12

This afternoon: the very 1st official experiment!
4-6PM George Washington University (Foggy Bottom Campus), Computer lab Tompkins 411

3D Multi-User Virtual Experiment
Transportation to Tompkins 411

Marriott Wardman Park Hotel
2560 Woodley Road NW
Washington, DC 20008

Time: 4 to 6 PM.
Transportation: by taxi (we'll pay!) or Subway

George Washington University (Foggy Bottom Campus)
Computer lab: **Tompkins 411**
725 23rd Street NW
Washington, DC 20052

3D Multi-User Virtual Experiment
Many, many thanks to

- Prof. Hamdar & GW University
- Prof. Robert Bertini

We hope to see you at our experiment!

3D Multi-User Virtual Experiment - TU Delft & NII

15. Adjourn

All Attendees