Transportation Research Board Annual Meeting

MINUTES

Traffic Flow Theory and Characteristics (ACP50) – Summer meeting

Tuesday, January 11, 2022, 10:30 AM – 12:00 PM EST
Transportation Research Board (TRB) Annual Meeting
Walter E. Washington Convention Center
Washington, DC
Room 204

Chair: L. leclercq
Minutes prepared by: S. Hamdar

Please note that these minutes have a PowerPoint companion with more details included.

1- Prof. Leclercq called the meeting to order at 10:30 am.

2- The sign in sheet was distributed with some members/friends joining through the Zoom online platform; no formal introductions were made given the time constraint.

3- Minutes from the previous ACP50 meeting (held on August the 23rd, 2021) have been posted online for comments – the minutes were approved.

4- A TRB report was presented by Prof. Bertini, head of the TRB Operations Section:
    a. Special thanks go to the Mr. Richard Cunard along with the rest of the TRB Staff with their efforts making the in-person annual meeting a reality.
    b. First time attendees are welcomed.

5- Dr. James presented several projects sponsored and managed by the Federal Highway Administration (FHWA) with several ones related to the Connected and Autonomous Vehicles (CAV) Analysis, Modeling, and Simulation Research Program:
    a. Data Collection Projects:
        i. Detailed CAV trajectory data are currently being collected by several teams in Northern Virginia, Washington DC, Chicago, and Central Ohio.
        ii. The sensor and helicopter data will be processed to obtain vehicle trajectories.
        iii. The objective is to make such data available on data.transportation.gov at the end 2022 or in early 2023.

  b. Modeling Projects:
     i. FHWA has several recently published reports on improving models and conducting case studies to capture the impacts of CAVs in traffic:

- *Case Studies:*
  - *SR-99 (California) Case Study Final Report available online: https://rosap.ntl.bts.gov/view/dot/54795.*
  - *I-66 (Virginia) Case Study Final Report available online: https://rosap.ntl.bts.gov/view/dot/56284.*
  - *Traffic Optimization for Signalized Corridors Final Report available online: https://rosap.ntl.bts.gov/view/dot/58023.*
- *Model Improvement:*
  - *CAV AMS Model Development Final Report available online: https://rosap.ntl.bts.gov/view/dot/57956.*
  - *The models documented in the final report are all open source and are available on GitHub (along with their algorithm description documents):*
    - *CACC and connected human driver model: https://github.com/STOL-AMS/TO-22-Improved-CACC*
    - *AV lane changing model: https://github.com/STOL-AMS/TO-22-Lane-Changing*
    - *Merge coordination: https://github.com/STOL-AMS/TO-22-Merge-Coordination*
    - *Speed harmonization: https://github.com/STOL-AMS/TO-22-Speed-Harmonization*
- FHWA recently started a new project to update two models using data collected from the aforementioned project. There were two stakeholder community events held in 2021 to discuss key questions from decisionmakers and policy makers, modeling gaps preventing the key questions from being answered, and case studies to provide context to the key questions. If anyone has ideas they'd like to be considered as we finalize the ADAS/ADS Modeling Gaps report, please contract Dr. James.

  c. Trajectory Investigation Project:
     i. This project collected trajectory data using drones and helicopters. This project used the high-resolution data to develop a new methodology for calibration microsimulation models using trajectory-level data. This project compared the performance of the trajectory-based calibration methodology against a traditional calibration procedure using infrastructure-based calibration data.
     ii. Trajectory Investigation for Enhance Microsimulation Calibration Final Report available online: https://rosap.ntl.bts.gov/view/dot/57959

6- Prof. Leclercq presented the ACP50 Chair's report:
  a. Critical topics in Transportation have been identified and the committee is encouraged to provide proposals associated with these topics while coordinating with the Research Problem Statements Subcommittee and Prof. Gayah.
  b. The TRB Annual Meeting is progressing smoothly; members/friends are encouraged to attend the different sessions sponsored by the committee (one committee meeting, one subcommittee meeting, three poster sessions and one lectern session).
  c. The number of papers reviewed by the committee and the corresponding recommendations are presented.

d. The ACP50 membership rotation is due in mid-February. Candidates interested in joining the committee as members may send an email to the committee chair for consideration.

e. Certificates of Recognition and Appreciation were announced with the first certificate dedicated to Prof. Hadi, the ACP50-1 Simulation Subcommittee (SimSub) outgoing chair; and the second certificate dedicated to Prof. Ahn, the ACP50 Committee outgoing chair.

7- The ACP50 Subcommittees' reports were presented:

a. Subcommittee on Connected and Automated Traffic Flow (ACP50-3: CAT-Flow): A report was presented by the Committee's chair, Prof. Hamdar.

b. Research Problem Statements Subcommittee: a report was presented by Prof. Gayah with the need to remain active in providing NCHRP problem statements and submitting related proposals. Members/friends interested in contributing may contact Prof. Gayah.

c. Paper Review Subcommittee:
   i. Figures and statistics on the 2022 TRB Annual Meeting review process lead by the were presented by Prof. Leclercq. The impact of the COVID-19 pandemic on the number of submissions versus the impact of sending manuscripts traditionally reviewed by the ACP50 to be handled by other committees has been raised. The return of the "call for papers" may help increasing the number of submissions in future years.
   ii. Special thanks were directed to the new subcommittee members, Prof. Menendez and Prof. Kim.
   iii. The Best Reviewer Award went to Prof. S. Ilgin Guler.

d. Awards Subcommittee: a report was presented by Prof. Leclercq on behalf of Prof. Ahn:
   i. The New Nathan Gartner Award (previously: Best Paper on Traffic Flow Theory Award) started this year (2022).
   ii. The process for award paper identification has been set: the papers are identified in October (based on the first review cycle); the authors are then contacted to inquiry about the readiness/intent to submit the manuscript for publication at TRR; editorial/review coordination is established with the TRR editorial staff for fast-tracking the review process.
   iii. Announcements on the TRB Operations Section Level Cunard Award is made (Prof. Ni).

e. Mid-Year Meetings (by Prof. Leclercq): The 2022 midyear meeting is still planned to be held in conjunction with the 24th International Symposium on Transportation and Traffic Theory (ISTTT 24): July 24-26, 2022, Beijing, China. If that is the case, the 2023 midyear meeting will be organized by TU Delft and will be held in Amsterdam, the Netherlands. If the ISTTT 24 is not held in person, an inquiry about the possibility of organizing the 2022 midyear meeting in the Netherlands may be made.

f. Outreach and Diversity Subcommittee: a report was presented by Prof. Hamdar on behalf of Prof. Talebpour:
   i. The newsletters, webinars, and website are being updated regularly. In terms of the TFTC Journal Club, the corresponding activities will be resumed in 2022.
   ii. Committee members and friends registered on the mytrb list will be directed to register at the ACP50 google listserv.
   iii. The main communication channel related to general announcements will remain through the ACP50 newsletter.
   iv. An inquiry related to updating the ACP50 Facebook Page is made.
   v. A remark on updating the ACP50 URL/hosting page is made.

8- The following updates are provided by our "Liaison" to other TRB Committees:

a. ACP80(1) – SimSub: attending the SimSub subcommittee meeting is encouraged; an announcement of the passing of Professor Kenneth Courage, who had a key role in in the creation and the promotion of the SimSub Subcommittee over a 20-year period, is made.

b. ACP80: Prof. Ozbay and Prof Hadi have an update on the ACP80 review process (160 papers reviewed), the sessions sponsored (three poster sessions and one lectern session) and the Traffic Simulation Manual (TSM) related activities (headed by Prof. List) are made. The details were announced at the ACP80 TRB Annual Meeting and a second meeting in March of 2022 to discuss the summer meeting.

c. ACP40: J. Sturrock provided a report with the 7th HCM Manual to be released this year (PDF and E-Book); additional chapters dealing with weaving are added (sponsored by a NCHRP Project).

9- Announcements: several conferences were announced with submission deadlines in January of 2022.

10- New business:
   a. Call for papers for next TRB due in May of 2022 and the workshops proposals are due in June of 2022.
   b. A ACP50 Strategic Plan is needed identifying the challenges and opportunities for our committee: a new subcommittee is to be formed with the creation of a triennial strategic plan.
   c. There might be the need to discuss the creation of new thematic subcommittees (possibly on network modeling and control …. etc.)
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11- The meeting was adjourned at 12:00 pm.