Cooperation of Tongji University and Technische Universität Darmstadt in Traffic and Transport

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History

Strategic Partnership

- 21 November 1980: Cooperation Agreement
- First Cooperation of an University in China with a German University of Technology in BRD
- Since March 2013 the partnership is funded by DAAD
- Contact office of TU Darmstadt at Tongji University
The cooperation between Tongji University and TU Darmstadt in Traffic and Transport goes back to the cooperation and friendship between Prof. RETZKO und Prof. YANG who both founded the institutes for traffic and transport at their universities.
History

Visit of Tongji President in 1989

Former President of Tongji University, Prof. Qidi WU, visited the Institute for Traffic and Transport in Darmstadt. (Later, she became Vize Minister for Education in Beijing.)
In 2004, Prof. RETZKO was awarded the title „Advisory Professor of Tongji University“ by former Vize President Prof. DONG.
(Prof. DONG is now Advisor of the Minister and Head of Educational Affairs in the Chinese Embassy in Berlin.)
Joint Symposium on Traffic Signal Control, Tongji University, Shanghai, 2005.

In 2006, Prof. RETZKO visited the former President of Tongji University, Prof. Gang WAN, on behalf of the TU Darmstadt President, Prof. J.-D. WÖRNER. (Prof. WAN is now Minister for Science and Technology in Beijing.)
History

Symposium 2009

Joint symposium:
1st Chinese-German Symposium on Urban Road Traffic Safety.
Tongji University, Shanghai, 2009
Jointly supervised doctoral student:
Ying NI: "Pedestrian Safety at Urban Signalised Intersections."

Jointly supervised Master theses, examples 2014:
T. ZHOU: "Potentials to Reduce Air Pollution in China by Optimizing Traffic Signal Control."
X. YU: "Applicability of Traffic Signal Control at Signalized Intersections with Light Railways (Trams) in China."
Joint International Activities

IDS – International Doctoral Seminar

Annual seminar since 2005
Presentations of doctoral candidates
Discussion of research methods and results
Coordination of research at involved institutes
Joint International Activities

WCTRS - World Conference on Transport Research Society

SIG C2 Urban Transport Operations

Addressed Topics:
- International Comparision of Control Strategies
- Intergreen Times at Traffic Signals
- Quality Management for Traffic Control
- Intelligent Transport Systems (ITS)
Joint International Activities

WCTRS World Conference on Transport Research Society

Scientific Committee

WCTR Scientific Committee Meeting and SIG Joint Conference at Tongji Universität, Shanghai, June 2015
Joint International Activities

WCTRS  World Conference on Transport Research Society

WCTR 2016 Shanghai

10-15 July 2015 at Tongji University

3,188 abstracts received
80 countries
39 session tracks
38 firm plans for special issues

Manfred Boltze:
Chairman WCTRS Scientific Committee

Keping Li:
Chairman Local Scientific Committee
Joint Research Interests
Road Traffic Safety

- Focus on traffic signal control
- Using microscopic traffic flow simulation
- Impact of intergreen times on safety and capacity
- Specific safety aspects for individual traffic modes: pedestrians, cyclists, e-bikes, trams, ...
Joint Research Interests

Utilization of Floating Phone Data

- Examination of data based on mobile phone networks to analyze travel demand
- Applications in transport planning as well as in operational traffic management
- Deduction of Origin-Destination matrices, analysis of mode changes, …
- Consideration of data protection and privacy issues

Comparison of „Location Area Changes“ (Phones) and detector data (vehicles) on the German Motorway A8
Joint Research Interests
Traffic and Environment

- Noise reduction
- Reduction of air pollution (notably particular matters and nitrogen oxides)
- Environment-responsive traffic control

Smog in Beijing, China
Source: www.zmescience.com

Annual Mean of PM$_{10}$-Concentration in Germany 2002 - 2012

Einführung der Umweltzone in 2008
PM$_{10}$-Jahresmittelwerte

Peak observed at a period of 90 seconds ($= T_U$)

Frequency Analysis of NO$_x$-Concentration at a Traffic Signal (Project AMONES)
Joint Research Interests
Traffic and Health

- Compilation of all impacts on health by using different traffic modes (fitness, stress, environmental loads by noise and air pollutants, accidents and injuries, …)

- Consideration in infrastructure planning (e.g. location of pedestrian and cycling paths)

- Consideration in traffic management and traffic information (e.g. route guidance)
Outlook

- Continuous exchange regarding actual research questions in China and Germany
- Mutual support and cooperation in international activities
- Further joint education of students (Master and doctoral education)
- Joint research projects
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