

Scientific Railway Signalling Symposium 2018
„Exploring new tracks with new digital technologies“

Call for papers

The railway control and safety technology is of critical importance for rail transport. It is not only the safety of passengers, freight and infrastructure facilities that depends on it, but also the capacity of the infrastructure. Digitisation as a catchphrase sums up countless innovative ideas that are supposed to revolutionise the railway system. It is clear to all actors that changes in the field of railway control and safety technology will come. They are necessary in order to maintain the competitiveness of the railway as a mode of transport and to ensure its sustainable contribution to achieving the climate goals. However, it is still unclear which changes will really take hold in the coming years and which will remain castles in the air in the foreseeable future. To master these challenges, an intensive exchange of information between all participants is necessary, especially between science and practice.

With the second Scientific Railway Signalling Symposium at the TU Darmstadt on June 13 2018, we would like to offer a platform to present and discuss current issues and innovative research approaches in the field of railway control and safety technology.

Please submit an abstract on the topics listed below. The abstract can be oriented to the respective key questions, but it can also focus on another current topic from the subject area.

Challenges on the way to a digital railway control and safety technology

e.g.

- What are the major changes that we will face in the coming years?
- Further automation potential (vs. remaining manual tasks)
- Train Location Technologies
- Train-based vs. infrastructure-based interlocking logic
- Fallback solutions for automated systems
- New approaches of railway safety outside of classic operating procedures

Formalising railway operating and planning processes

e.g.

- Potential of formalised regulations

Institut für Bahnsysteme und
Bahntechnik
*Institute of Railway
Engineering*

Prof. Dr.-Ing. Andreas Oetting



Otto-Berndt-Straße 2
64287 Darmstadt

Tel. +49 6151 16 – 65911
Fax +49 6151 16 – 65939
eisenbahn@verkehr.tu-darmstadt.de

Date
15.11.2017

Contact:
M.Sc. Frederik Düpmeier
Tel. +49 6151 16 – 65924
duepmeier@verkehr.tu-darmstadt.de

Stadt- und Kreissparkasse Darmstadt
Kto-Nr. 704 300
BLZ 508 501 50
IBAN-Nr:
DE 29 5084 0005 0133 4101 00
Ust-ID DE 111 608 628
Ust-Nr. 007 226 001 39



- Operational interoperability
- Existing approaches of formalised methodology

Future of ETCS

e.g.

- Impact on capacity and operational stability
- Potential for improvement
- Sufficiency of ETCS as a communication interface between track and train in case of automated operation

Cyber security and interfaces

e.g.

- IT security requirements for the design of safety critical systems
- Weak points of functional safety architecture
- Interface formats
- Collection, storage, and distribution of reliable infrastructure and train data
- Proof of safety for short-term security patches

The abstract should be no longer than two pages. It should present an innovative approach to the questions described above. The first publication should not be older than two years. Please send your abstract as .pdf to duepmeier@verkehr.tu-darmstadt.de by January 31 2018. If the abstract is accepted, the deadline for the full paper is March 31. The full paper will go through the peer review process. We expect that accepted papers will be presented in a 20-minute lecture plus discussion at the Scientific Railway Signalling Symposium. You may submit and present your paper in German and English language.

The symposium will take place on June 13 2018. After the sessions, there will be a joint conference dinner with the ETK conference, which will take place the next day. There is no participation fee. The price for the evening event incl. dinner and drinks is 45 Euro.

Frederik Döpmeier will be happy to answer your questions (contact details on the right).

We would be pleased to receive your abstract and are looking forward to welcoming you at the Scientific Railway Signalling Symposium 2018.