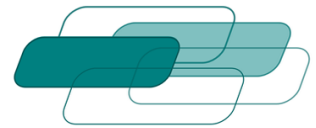


Information and Invitation
3rd
International Symposium
on AERODYNAMICS
of TRAINS and
INFRASTRUCTURE

CONFERENCE DATE:
31st January - 1st February 2018

Deadline for participant application:
22th January 2018



ifv Bahntechnik

Interdisziplinärer
Forschungsverbund
Bahntechnik e.V.
Interdisciplinary
Railway Research
Association

Welcome to Berlin!

3rd International Symposium

RAIL-AERODYNAMICS 2018

Aerodynamics of Trains and Infrastructure

Berlin, 31 January - 1 February 2018

www.railway-network.eu/aerodynamics

YOUR application is very welcome before 22th of January

Apply now to join the SYMPOSIUM and the EXHIBITION with all advantages of SYSTEMATIC NETWORKING!

Official partners of the exhibition Rail-Aerodynamics 2018

✓ **SYMPOSIUM**

✓ **EXHIBITION**

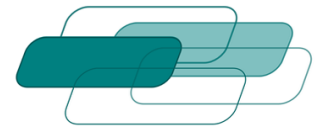
✓ **NETWORKING**

The **WORLD CONFERENCE**
on **AERODYNAMICS**
of **TRAINS and INFRASTRUCTURE**



Contact us to place your company logo here ⇒ email@railway-network.eu

www.railway-network.eu/aerodynamics



WHY to join the international symposium RAIL-AERODYNAMICS and TRAIN-DESIGN?

During the 3rd symposium all relevant aspects of RAIL AERODYNAMICS of different categories of **rail vehicles** (vehicles for high speed transportation systems, locomotives, coaches, freight waggons etc.) shall be reflected.

Also **railway infrastructure** will be discussed concerning relevant buildings like tunnels and bridges. To cover relevant aspects of **recent research**, crosswind stability and slipstream effects, advanced methods of calculation or simulation will be presented. Speakers from operation companies and railway industry will contribute some **empirical findings from recent projects**.

During ten networking modules, there will be enough time to discuss the most important topics with speakers and exhibition partners. We are looking forward to seeing you in Berlin!

Participants from all over the world may expect highly specialised presentations.

If you are interested in an (optional) excursion to Göttingen, please ask for details.

If the following **TOPICS** are relevant to your current fields of work, the symposium RAIL-AERODYNAMICS 2018 is important for YOU!

ROLLING STOCK

- * AERODYNAMICS of Rail Vehicles
- * CROSSWIND STABILITY
- * TRAIN DESIGN (Wagon Design)

INFRASTRUCTURE

- * TUNNELS
- * BRIDGES (and other terrain)
- * RAILWAY STATIONS (slipstream)

Rail-Aerodynamics and Train-Design

Berlin,

31st January - 1st February 2018

RESEARCH & DEVELOPMENT

- * SCIENTIFIC RESEARCH
- * PRODUCT DEVELOPMENT
- * SIMULATION AND TESTING
- * (NEW) TRAIN DESIGN

REGULATIONS

- * LEGISLATION and REGULATION
- * HOMOLOGATION
- * VERIFICATION MANAGEMENT

PROGRAMME on Wednesday, 31st January 2018

3rd International Symposium on RAIL-AERODYNAMICS of TRAINS and INFRASTRUCTURE

⊙ 08:55 - 09:55 CHECK-IN-TIME: Come together / Exhibition / Networking Coffee #1

Opening speech: Rail-Aerodynamics and Train-Design 2018

Diplom-Volkswirt E. **SCHULZ** - Managing Director - [Interdisziplinärer Forschungsverbund Bahntechnik e.V.]

Silberling Steuerwagen BDnrzf740: Windkennkurvenberechnung und Vergleich nach EN14067-6 mit STBR-sowie nach RIL807.04 mit TFG-Windkanalkonfiguration

(besondere Aspekte bei den Windkanalversuchen und der WKK Berechnung mit MKS-Simulation)

Prof. Dr.-Ing. Rolf **NAUMANN** - [ISyM - Institut für Systemdynamik und Mechatronik; FH Bielefeld]; Co-Authors: M. Sc. Sönke **LÜCK** - [FH Bielefeld]; Dr. rer.nat. Uwe **Fey** - [Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)]; - Dr. René **Volkert** [DB Systemtechnik GmbH]

Neuer Ansatz zur Bewertung des Druckkomforts auf deutschen Hochgeschwindigkeitsstrecken mit eingleisigen Tunneln: Probandenstudie durch Druckkammerversuche zur Einschätzung des Druckkomforts
Dipl.-Phys. Christoph **BAUMANN** - [DB Systemtechnik GmbH; Aerodynamik und Klimatechnik]

⊙ NETWORKING-BREAK Networking Coffee and Exhibition #2

Pressure-loads in high-speed tunnels: Study of the pressure loads on safety doors in high-speed tunnels using model scale experiments and numerical simulations

Dr. Daniela **HEINE** - group leader Verkehrsaerodynamik - [DLR; Institut f. Aerodynamik u. Strömungstechnik]

Pressure comfort and pressure tightness and their impact on train design:

How to ensure passenger comfort during tunnel passage

Dr.-Ing. Erik **WASSEN** - Specialist Aerodynamics - [Bombardier Transportation GmbH; Aerodynamics and Thermodynamics]

⊙ NETWORKING-BREAK LUNCH / Networking Coffee / Exhibition #3

Approach to avoid thermal short circuit and energy loss caused by air inlets and outlets on a train: CFD simulation of the flow field near a regional train and study of the in and outlet positions of HVAC systems
Songyi **DENG** - [DB Systemtechnik GmbH; Aerodynamik und Klimatechnik]

Aerodynamic drag measurement of rail vehicles by means of towing tank tests:

A new moving model technique

M. Sc. Jonathan **TSCHPE**; Co-Authors: Christian Navid **Nayeri**; Christian Oliver **Paschereit** - [Technische Universität Berlin; Institut für Strömungsmechanik und Technische Akustik]

⊙ NETWORKING-BREAK Networking Coffee and Exhibition #4

Partially-averaged Navier-Stokes method for bluff body and train aerodynamics:

Initial results using a k-omega-SST PANS implementation in OpenFOAM

M. Sc. Denes **FISCHER**; Co-Authors: Christian Navid **Nayeri**; Christian Oliver **Paschereit**; Jonathan **Tschepe** - [Technische Universität Berlin; Institut für Strömungsmechanik und Technische Akustik]

Most relevant topics of RAIL-AERODYNAMICS in the design of the next generation of rail vehicles

Diplom-Volkswirt E. **SCHULZ** - Managing Director - [IFV Bahntechnik e.V.]; --- **SPEAKER PANEL** ---

⊙ 17:15 (approx.) End of the official programme of the FIRST CONFERENCE DAY

NETWORKING EVENT

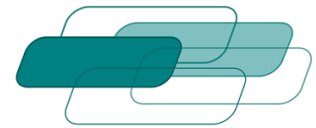
RAIL-AERODYNAMICS 2018

**Sightseeing-Tour
& Networking-Dinner #5**

BERLIN BY NIGHT 2018

The Networking Event in BERLIN is supported
by our SPONSORING PARTNERS:





PROGRAMME on Thursday, 1st February 2018

3rd International Symposium on RAIL-AERODYNAMICS of TRAINS and INFRASTRUCTURE

☉ 07:45 - 08:45 CHECK-IN-TIME: Come together / Exhibition / Networking Coffee #6

Rail-Aerodynamics 2018: Infrastructure and rolling stock (new approaches in interdisciplinary research)
Diplom-Volkswirt E. [SCHULZ](#) - CEO - [Interdisciplinary Railway Research Association]

Aerodynamische Aspekte beim Betrieb von Personenzügen im Gotthard-Basistunnel:

Messtechnische und experimentelle Untersuchungen an der Tunnel-Infrastruktur sowie an druckdichten und nicht druckdichten Fahrzeugen

Dr. Achim [ZANKER](#) - Systemingenieur Aerodynamik und Versuche [SBB AG] - and Dr. Michael [FLÜCKIGER](#) - [HBI Haerter AG]; Co-Authors: Dr. Andreas [Busslinger](#) - [HBI Haerter AG]; Dr. Ralf [Hofer](#) - Leiter Klima, Akustik und Aerodynamik - [SBB AG, Personenverkehr; Operating, Flottentechnik]

New requirements for crosswind stability assessment of trains:

Introduction of EN compliant reference wind curves by a new EBA guideline (Eisenbahn-Bundesamt)

Dr.-Ing. René [VOLKERT](#) - [DB Systemtechnik GmbH; Aerodynamik und Klimatechnik]

☉ NETWORKING-BREAK Networking Coffee and Exhibition #7

Prediction of aerodynamic coefficients due to crosswinds utilizing detached eddy simulations:

Current simulation approach and comparison to wind tunnel measurements

Dipl.-Ing. Nathalie [FLASSIG](#) - [Bombardier Transportation GmbH; Aerodynamics and Thermodynamics]

High-Speed Particle Image Velocimetry for Near-ground Boundary Layer Investigation on a Moving Train Model:

Influence of a Ground-effect, Inter-car Gap and Vortex Generators on the Induced Flow Velocities at various Heights above Ground

M. Sc. Alexander [BUHR](#) - [DLR; Institute of Aerodynamics and Flow Technology; Department Fluid Systems]

☉ NETWORKING-BREAK LUNCH / Networking Coffee / Exhibition #8

Force and velocity field measurements on two trains in platoon configuration:

Platooning, drag forces, velocity and vorticity fields

M. Sc. Thomas [THIEME](#) - Wissenschaftlicher Mitarbeiter - [DLR; Institute of Aerodynamics and Flow Technology]; Co-Autors: Henning [Wilhelmi](#); Arne [Henning](#); Claus [Wagner](#)

System of oscillating flaps to impose unsteady aerodynamic loads on vehicle models:

Development, construction and initial operation

M. Sc. Max [MÜLLER](#) - [DLR; Institute of Aerodynamics and Flow Technology]

☉ NETWORKING-BREAK Networking Coffee and Exhibition #9

Competitive Freight Waggon (CFW):

Aerodynamic aspects of a novel waggon design to make rail transport significantly more attractive

Dr.-Ing. Arne [HENNING](#) - Gruppenleiter - [DLR; Gruppe Fahrzeugaerodynamik und -akustik]

Aerodynamik beim Mischverkehr: Hochgeschwindigkeitszüge, Nahverkehrszüge und Güterzüge zeitgleich auf Hochgeschwindigkeitsstrecken (Herausforderungen und Lösungsansatz am Netz der ÖBB-Infrastruktur AG)

Dipl.-Ing. Wolfgang [STREHN](#) - [ÖBB-Infrastruktur AG; Betriebsleitung Fahrzeugtechnik]

Concluding remarks: Rail-Aerodynamics 2018 and beyond

Diplom-Volkswirt E. [SCHULZ](#) - Arbeitskreiskoordinator - [Arbeitskreis Rail-Aerodynamics] --- **SPEAKER PANEL**

☉ 16:00 ~ 16:15 END of the official programme of the SECOND CONFERENCE DAY
FINAL NETWORKING (#10)

EXHIBITION /// EXCURSION (OPTIONAL)

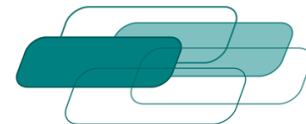


RAIL-AERODYNAMICS 2018 --- Aerodynamics of TRAINS and INFRASTRUCTURE

Version 3 (update) of the programme brochure: 10.01.2018 *** The programme may be subject to alterations. *** The spoken word applies!
The terms and conditions (www.ifv-bahntechnik.de/agb.pdf) are binding for all contracts with the organiser IFV BAHNTECHNIK e.V.

RAIL-AERODYNAMICS 2018

www.railway-network.eu/aerodynamics



ifv Bahntechnik

GENERAL INFORMATION:

Date of the symposium: 31st Jan. - 1st Feb. 2018
Applications are welcome before 22th of January

VENUE:

Tagungshotel Titanic Comfort Mitte, 10117 Berlin

PLEASE NOTICE:

Conference language: ENGLISH

ONLINE INFORMATION:

www.railway-network.eu/aerodynamics



WHAT?

Programme

The complete **PROGRAMME** of the 3rd International Symposium **RAIL-AERODYNAMICS and TRAIN-DESIGN 2018**

(and all updates of the programme)

may be found online on the conference website:

>>> www.railway-network.eu/aerodynamics

or on the organisers homepage:

>>> www.ifv-bahntechnik.de

HOW?

Application

DEADLINE FOR PARTICIPANT APPLICATION:

Monday, 22th of January 2018

The mandatory **APPLICATION FORM** for participants is available only on the official conference website (check for updates!):

Download → www.railway-network.eu/aerodynamics/brochure.pdf

WHERE?

Venue

HOTEL recommendation for the symposium **Rail-Aerodynamics 2018** in BERLIN-MITTE (nearby Metro-Station SPITTELMARKT)*.

The complete list of hotels at the venue is available for registered participants. → Just ask the organiser IFV BAHNTECHNIK e.V. (Team Event-Management) for assistance.

* Participants need a check-in-card to enter the conference rooms. Registered participants will receive their check-in-card by e-mail or at the check-in-counter (after completing the payment process).

QUESTIONS?

Ask the Organiser

Contact the ORGANISER of the symposium Rail-Aerodynamics: IFV Bahntechnik e.V. (Interdisciplinary Railway Research Network) Salzufer 17 - 19 / SG20, 10587 Berlin - Fax: +49(0)30 31425452 Phone: +49(0)30 31421698 (Mr. Schulz, Managing Director, CEO) Phone: +49(0)30 31429298 (Ms. Heyer, Event Management) Phone: +49(0)30 31473807 (Ms. Akar, Payment) E-mail: office@railway-network.eu or tagung@ifv-bahntechnik.de

VISIT!

Exhibition

EXHIBITION Rail-Aerodynamics and Train-Design 2018 takes place during the symposium in Berlin.

Please ask for BRONZE, SILVER or GOLD package for exhibitors or PLATINUM package for GENERAL SPONSORING PARTNER.

The official list of EXHIBITORS and SPONSORING PARTNER will be updated regularly on the conference homepage:

>>> www.railway-network.eu/aerodynamics

READ!

Publication

PROCEEDINGS of the recent Rail-Aerodynamic symposia are available as PRINTED BOOKS, published by IFV BAHNTECHNIK.

Rail-Aerodynamics 2013 / 340 pages / ISBN 978-3-940727-37-4
Bahn-Aerodynamik 2010 / 210 pages / ISBN 978-3-940727-17-6

All available PUBLICATIONS from our BOOKS IN PRINT LIST may be ordered directly from the publisher - (of course not: amazon):

Online order form: www.bahntechnik-netzwerk.info/verlag

www.railway-network.eu/aerodynamics

APPLICATION FORM FOR CONFERENCE PARTICIPANTS

RAIL-AERODYNAMICS 2018

THREE STEP REGISTRATION PROCESS:

1. In order to be registered as a participant we ask you to send a binding registration before 22th of January 2018. Please fill in the registration form and send it to IFV Bahntechnik e.V. (or to IFV GmbH) via fax or e-mail. (Please do not forget your signature!).
2. As soon as your registration form has arrived we will send IMMEDIATELY a written confirmation of application and an invoice to the address you have stated. At this moment you will also receive a list of recommended hotels at the venue for your convenient booking.
3. **The registration fee is due at the time of registration and has to be paid completely before 25th of January 2018.** Only participants with valid check-in-card are allowed to enter the conference rooms and to join the symposium (and the exhibition hall).

* The documents mentioned above will be sent to you by mail as well as via e-mail. Therefore we kindly ask you to state your e-mail address on the registration form. Attached to the e-mail you will also find the address and the directions to the conference venue.

If you have any questions - just contact the organising team at IFV BAHNTECHNIK e.V. - (www.Railway-Research-Association.eu)!

Herewith I declare my binding participation in the symposium >>> RAIL-AERODYNAMICS 2018 <<< on 31st January - 1st February 2018 in Berlin. The fee is due at the time of registration.

I agree with the terms and conditions of the organiser (www.ifv-bahntechnik.de/agb.pdf).

Please send the completed and signed APPLICATION FORM via E-MAIL >>> tagung@ifv-bahntechnik.de or FAX >>> +49(0)30 31425452 (respectively +49(0)700 47472000).

PARTICIPANT:

Mr / Ms NAME: _____

Company (Dept.): _____

Street: _____

ZIP Code, City, Country: _____

Telephone / Mobile: _____

E-MAIL: _____

(YOUR VALID E-MAIL-ADDRESS IN CAPITAL LETTERS)

Billing Address: _____

UID-number: _____

The participant will receive extensive conference materials - including the printed proceedings RAIL-AERODYNAMICS 2018.

To promote the networking activities of participants and speakers, the evening event in a restaurant (Berlin by night) is already included.

Complete payment must be received before 2018-01-25. Delegates may pay on site in case of problems with bank transfer (+100 € extra fee).

1350,- EURO Participant Ticket (regular / last minute fee)

Regular participant ticket includes entrance for both conference days of Rail-Aerodynamics 2018 and the evening event [inclusive lectures, conference catering, conference proceedings (value of the printed book: 240 EURO), VAT].

ALL REGULAR PARTICIPANT FEES have to be paid via bank transfer (or via credit card)

before 25th of January 2018 to avoid an additional fee of 100 EURO because delayed payment handling.

REDUCED FEE / MEMBER TICKET / VIP TICKET *

1250 EURO* Reduced fee ticket for personal members of IFV BAHNTECHNIK (see: www.bahntechnik-experten.info)

1150 EURO* Reduced fee ticket for corporate members of IFV BAHNTECHNIK (see: www.bahntechnik-firmen.info)

1050 EURO* Reduced fee ticket for co-speaker, co-author or VIP guests of the sponsoring partners

* Reduced fee has to be paid **before 22th of January 2018** (otherwise the REGULAR PRICE (1350 €) has to be paid)

→ PLEASE INDICATE: Preferred payment method: Bank Transfer Credit Card (plus 22 € for extra form services)

→ EXCURSION (optional): I would like to join the excursion to Göttingen - please send more detailed information.

→ SPONSORING-PACKAGES: Bronze: 500 €; - Silver: 1000 €; - Gold: 2000 € (plus german VAT)

>>> Date / Signature:



<<<

Payment Procedure: Please notice that your personal check-in-card will be activated after the payment process is finished. In case of delayed or incomplete payment the regular registration fee plus an extra handling fee of 100 € will be charged when paying cash on site (BEFORE THE CONFERENCE BEGINS). Complete fee has to be paid before entering the conference rooms.

Cancellation conditions: Regular cancellation is possible no later 4 weeks before the conference begins. Cancellation fee: 150 €. In order to avoid any cancellation fees, we recommend to nominate a substitute from your company - **completely free of charge!**

Do you have any questions? → PLEASE CONTACT THE ORGANISER:

>>> Managing Director: Mr. Schulz (CEO) - phone: +49(0)30 81898731 - cell phone: +49(0)17670094803

>>> Registration: Event-Manager (Ms. Heyer): +49(0)30 31429298 - Payment (Ms. Akar): +49(0)30 31473807

>>> E-mail: office@ifv-bahntechnik.de or tagung@ifv-bahntechnik.de or FAX +49(0)30 31425452

The programme may be subject to alterations! - See conference website: www.railway-network.eu/aerodynamics - Programme Version: 10th of January 2018 (update: v4)

For updates see >>> www.railway-network.eu/aerodynamics