

Invitation and Programme

10th Commercial Vehicle Workshop Graz

16th - 17th May 2024

**CAE Methods | Energy and Infrastructure for Commercial Transportation Systems |
CO₂ Reduction Strategies | Vehicle Architectures and Structural Concepts**



Including: Focus Seminar „Introduction to Brake Emissions and Testing“



The Institute of Automotive Engineering (FTG) at Graz University of Technology organises the 10th Commercial Vehicle Workshop this year. The conference switches completely to English language and offers additionally peer reviewed scientific papers. The Focus Seminar becomes an integral part of the workshop.

The 10th anniversary demonstrates 20 years tradition of the workshop and shows 20 years of technological trends and development history of commercial vehicles. Freight transport by road has increased by a factor of around 1.6 during this period in Middle Europe. Although commercial vehicles are purely cost-driven means of transportation, amazing developments have taken place during this time, for example in driver assistance systems, cabin comfort, pollution reduction and alternative drive systems.

This year, the Focus Seminar draws attention to non-exhaust particle emissions. Brake emissions for passenger cars will be limited by Euro 7 in July 2025. Brake emission limits for heavy commercial vehicles and tire wear are expected to follow within a few years. Knowledge on non-exhaust particle emission behaviour will be required and options to reduce brake emissions of commercial vehicles have to be developed.

The workshop on the second day deals with CAE and simulation methods, CO₂ reduction strategies, energy and infrastructure for commercial transportations systems, vehicle architectures and structural concepts.

Finally, we would like to invite you to an evening reception at Puch Museum Graz on behalf of the Mayor, an interesting program for accompanying persons and a visit to laboratories.

Prof. Dr. Peter Fischer

Prof. Dr. Wolfgang Hirschberg

Programme Committee:

- Dipl.-Ing. Klaus-Dieter Diepold, *Magirus GmbH, Ulm*
- Prof. Dr. Peter Fischer, *Inst. of Automotive Engineering , TU Graz (Chair)*
- Dr.-Ing. Rolf Döbereiner, *AVL LIST GmbH, Graz*
- Prof. Dr. Wolfgang Hirschberg, *Inst. of Automotive Engineering , TU Graz (Chair)*
- Prof. Dr. Stefan Hausberger, *Inst. of Thermodynamics and Sustainable Propulsion Systems, TU Graz*
- Dr.techn. Dipl.-Ing. Antonius Kies, *SCANIA AB*
- Prof. Dr. Alexander Lion, *Universität der Bundeswehr, Munich*
- Dr. Karl Masser, *Magna Powertrain, Engin. Center Steyr GmbH & Co KG, St. Valentin*
- Dipl.-Ing. Martin Ackerl, *Daimler Truck AG, Stuttgart*
- Dipl.-Ing. Gregor Schwarz, *Rosenbauer International AG, Leonding*

Conference chair

Prof. Dr. Peter Fischer
Prof. Dr. Wolfgang Hirschberg

Chair "Focus Seminar"

Prof. Dr. Peter Fischer

Organisation

Mrs. Samra Becirovic
Institute of Automotive Engineering, TU Graz
Inffeldgasse 11, OG II, 8010 Graz, Austria
Phone: +43 / 316 873-35201
E-Mail: office.ftg@tugraz.at

General Information:

Focus Seminar Graz, 16th May 2024

Commercial Vehicle Workshop Graz, 17th May 2024

LOCATION

Graz University of Technology,
Old Campus
Rechbauerstraße 12,
8010 Graz, Lecture Hall I

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Graz University of Technology,
Old Campus
Rechbauerstraße 12,
8010 Graz, Lecture Hall I

CONFERENCE FEE

The conference fee including "Get together",
workshop documentation, lunch, coffee breaks
amounts to € 580,00
for university members € 290,00
for students € 65,00

No value added tax is included. Please transfer the conference fee latest May 2nd, 2024
- free of charge for the receiver - on the account:

Bank: Bank Austria IBAN: AT51 1200 0516 5610 1835
Purpose: 10th Commercial Vehicle Workshop Graz BIC: BKAUATWW

REGISTRATION

Please use the link ftg.tugraz.at/veranstaltungen/nfz-workshop for registration.
Alternatively, also the enclosed registration form can be used **until May 2nd 2024 latest.**

CANCELLATION

A refund of in-paid fee is not possible after May 2nd, 2024.

ARRIVE & INFORMATION ABOUT ACCOMMODATION.

Information about Graz and a hotel guide are provided on the following web pages:
https://www.graztourismus.at/kongress/de/kongresskalender/10.grazer-nutzfahrzeugworkshop_ccd_8464
Responsible for the hotel reservation at Graz tourism is Mr. David Pösinger.
Tel.: +43/ 316 8075-47
Email: david.poesinger@graztourismus.at

From the airport Graz Thalerhof all hotels are well reachable by taxi.

Focus Seminar „Introduction to Brake Emissions and Testing“

Thursday 16th May 2024

12:30 Registration

13:20 Welcome

Wolfgang HIRSCHBERG and Peter FISCHER
Institute of Automotive Engineering, Graz University of Technology

Introduction to Brakes and Tire Emissions, Brake Emission Testing

13:30 Enviromental and Health Effects of Non-Exhaust Emissions

Ludwig SCHUBERT
Institute of Automotive Engineering, Graz University of Technology

14:00 Brake Emission Testing Heavy Duty Vehicles

Christian WANEK-RÜDIGER
AVL List GmbH, Graz

14:30 Innovative Testing Technology for Brake Systems

Peter BRUNNHOFER
Institute of Structural Durability and Railway Technology, Graz University of Technology

15:00 Coffee break

Brake Emission Reduction

15:30 Engineering Approaches for the Reduction of Brake Emissions of Heavy Duty Vehicles

Christof DANNER
AVL List GmbH, Graz

16:00 A Mechanical Admittance-Based Parameter Estimation Method for Electromechanical Drum Brakes

Daniel STÜMKE
Robert Bosch GmbH, Stuttgart

Cordial Welcome:

17:00 Visit to FTG and Labs

Inffeldgasse 11, 8010 Graz



20:00 „Get Together“

Evening Reception and Dinner at the „Puch-Museum“

Puchstrasse 85, 8020 Graz



Programme Commercial Vehicle Workshop Graz:

Friday, 17th May 2024

08:00 Registration

CAE and Simulation Methods

08:30 BEV Truck Efficiency Optimization with Focus on Vehicle Thermal and Energy Management

Julian BODORY,

Magna Powertrain Engineering Center SteyrGmbH & Co KG, St. Valentin

09:00 A Comparative Study of Different Li-ion Battery Modelling on Thermal Management System

Tommi HUHTALA

Faculty of Technology, University of Oulu

09:30 VECTO Trailer – The Official Approach to Determine the Performance of Heavy-Duty Trailers Regarding Their Impact on Fuel Consumption and CO₂ of Motor Vehicles

Stefan PRESENT,

Institute of Thermodynamics and Sustainable Propulsion Systems, Graz Univ. of Technology

10:00 Coffee Break

Energy and Infrastructure for Commercial Transportation Systems

10:30 Future Fuels and their Relevance to Heavy Duty Transportation

Lydia Gehrlein,

Daimler Truck AG, Stuttgart

11:00 Move2zero - Decarbonisation of an Urban Public Bus System and Integration of Innovative On-Demand Services – Project Results and Key Findings

Lisa GÖTTFRIED

Grazer Energieagentur, Graz

11:30 MegaWatt Charging - Success Factor for Commercial Vehicle Electrification

Benjamin LANGER

AVL List GmbH, Graz

12:00 Lunch

CO₂ Reduction Strategies

13:00 Overview of Low-Fossil Powertrains for Future Road Tractors

Antonius KIES,
Scania AB

13:30 Evaluation of Challenges and Solutions for Achieving the CO₂ Targets for Commercial Vehicles

Thomas GRIMM
TU Schaeffler Technologies AG & Co. KG, Herzogenaurach

14:00 Coffee Break

Vehicle Architectures and Structural Concepts

14:30 Configurable Design Approach for Heavy-Duty Vehicle Powertrain Design

Isa BANAGAR
Faculty of Technology, University of Oulu

15:00 Study on Alternative Support Structure Concepts in Commercial Vehicles

Jürgen HINTEREDER,
MAN Nutzfahrzeuge SE

15:30 Aspects of the Virtual Vehicle Development of the BET-Motors ExoSkate®: A Purpose-Designed Battery Electric Truck Platform Without Compromises

Andreas VOLK
BET Motors GmbH, Graz

16:00 Closing Remarks

Peter FISCHER & Wolfgang HIRSCHBERG
Institute of Automotive Engineering, Graz University of Technology

Get Together for Closing the Day



As the second largest Austrian city, Graz is at the same time a trade fair, conference, university and garden city. About 350.000 inhabitants, over 60.000 students at three universities and numerous studies at the universities of applied sciences create a lot of movement. Graz, the gate to the south-east, proves this as an economic, technological and scientific center, as a renowned „know-how-pool“ and of course as the European Cultural Capital 2003. At the intersection of European cultures, the Styrian capital is aware of its cultural responsibility, trusts in its strengths and realizes its visions.

Contemporary architecture finds its place next to the noteworthy literature; a free theatre scene next to galleries and museums, Nobel Prize winning intellect next to colourful festivals; prominence next to everyday culture.

Graz's bar scene is worth the trip. Lively and charming, it invites one of epicurean enjoyments, stroll and flirting; full of ideas, it convinces one with its food and ambience. Street cafes, bars, beer gardens, wine bars and jazz clubs reveal themselves to be open-minded and simply let the night end at the first sign of daybreak. To sum up: Graz has the culture of a metropolis, the charm of a well kept inside tip and the flair of the Mediterranean flavor of life.



Information:

GRAZ Tourismus GmbH,
Herrengasse 16, 8010 Graz
Phone: +43 / 316 8075-0
E-Mail: info@graztourismus.at

Fax: + 43 / 316 8075-15
Internet: www.graztourismus.at



Thursday, May 16th, 2024

Meeting Point: 11:00 am

Old Campus, Rechbauerstraße 12, Foyer Lecture Hall I
8010 Graz

11:30 am: Visit of Landeszeughaus

01:00 pm: Lunch

02:30 pm: City Tour

04:30 pm: Visit of Schlossberg

Approx. 05:30 pm return

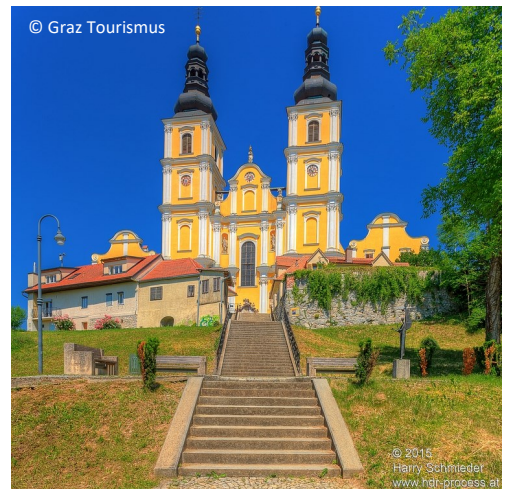


Friday, May 17th, 2024

Meeting Point: 10:00 am
Old Campus, Rechbauerstraße 12
8010 Graz

11:00 am: The Botanical Garden
01:30 am: Trip to Maria Trost
01:00 pm: Lunch
02:00 pm: Guided tour - Basilica Maria Trost
03:30 pm: Return Journey

Approx. 04:30 pm return



Director: Prof. **Fischer**
Scientific Coordination, Strategy, Invest, Administration, Task Force

Automotive Mechanics Assoc.Prof. *Hirz*

Transport Innovations
and Environment
Hirz

E-Mobility and Alternative
Drivetrains
Hofstetter

Automotive Mechanics
Product Development
Kreis

Experimental Research
Sensors, Batteries,
Robotics

Assisted and Automated Driving Assoc.Prof. *Eichberger*

Vehicle Verification and
Validation
Mihalj

Human Machine
Interaction
Eichberger

Experimental Research
On-road Testing and
Driving Simulation

Vehicle Dynamics and Tires Assoc.Prof. *Lex*

Tire Modeling, Testing
and Particle Emissions
Lex

Vehicle State and Para-
meter Estimation
Lex

Experimental Research
Objective Vehicle
Dynamics & Tire Testing

Structural Design Prof. *Fischer*

Structural Simulation,
Noise & Vibration
Fischer

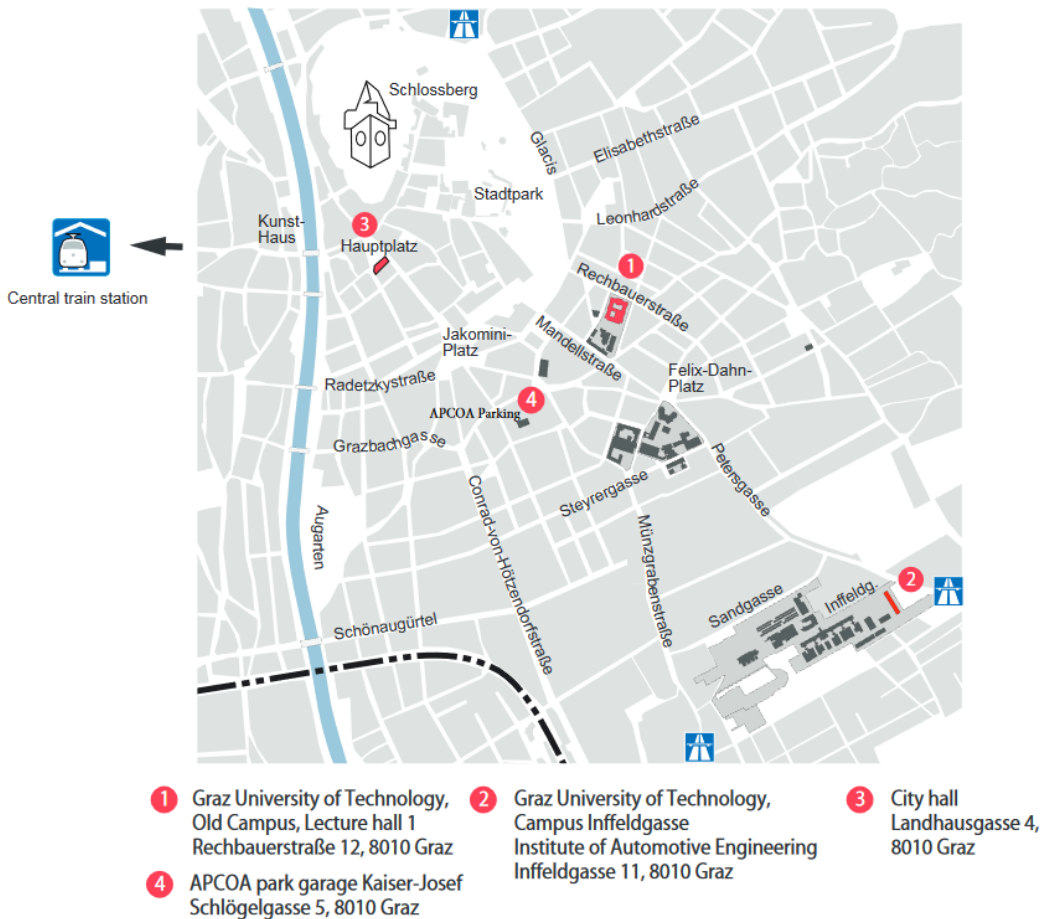
Brakes and Brake Particle
Emissions
Fischer

Experimental Research
E-Drive Systems and
Brakes

General Laboratory

Measurement Equipment, Workshop, Test Vehicles, Prototypes, Suspension- and Brake Testbench
Magosi

City map of Graz:



For Information: Reserved free parking places are available for the participants

Alternatively Registration Form:

Deadline 2nd May 2024

Commercial Vehicle Workshop Graz

Please use the link ftg.tugraz.at/veranstaltungen/nfz-workshop for registration. Alternatively, fill out the form below and scan and E-Mail to office.ftg@tugraz.at

CONFERENCE FEE

Conference Fee including „Get Together“, Workshop
Documentation, Lunch, Coffee Breaks

- | | |
|---|----------|
| <input type="checkbox"/> Regular | € 580,00 |
| <input type="checkbox"/> for University Members | € 290,00 |
| <input type="checkbox"/> for Students (with ID) | € 65,00 |

No Value added Tax is included. Transfer the Conference Fee by May 2, 2024 latest (free of Charges for the Receiver) to:

Bank: Bank Austria BIC: BKAUATWW IBAN: AT51 1200 0516 5610 1835
Purpose: 10th Commercial Vehicle Workshop Graz

- | | |
|---|------------------------------------|
| <input type="radio"/> Visit of FTG | 16 th May 2024, 17:00 h |
| <input type="radio"/> „GET TOGETHER“ | 16 th May 2024, 20:00 h |
| <input type="radio"/> Programme for Accompanying Person(s) | 16 th May 2024, 11:00 h |
| <input type="radio"/> Programme for Accompanying Person(s) | 17 th May 2024, 10:00 h |

Mrs Mr

Title: _____

First name/ Name: _____

Company / Institution: _____

Department: _____

Address: _____

Postal code: _____

City: _____

Country: _____

Phone: _____

E-Mail: _____

Date: _____

Signature: _____

FTG

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