

# 13<sup>TH</sup> INTERNATIONAL CONFERENCE **TUNNEL SAFETY AND VENTILATION**

APRIL 21-23, 2026 | GRAZ, AUSTRIA

## Conference Agenda

**Date: Monday, 20/Apr/2026**

6:00pm Get-together [optional]

9:00pm

**Date: Tuesday, 21/Apr/2026**

8:00am	Registration
9:00am	
9:00am	<b>Opening Session</b> Location: <b>Hall Styria</b>
9:15am	
9:15am	<b>Keynote Speakers</b> Location: <b>Hall Styria</b>
10:15am	
	<b>9:15am - 9:35am</b>
	<b>Sustainability of tunnel operation: new approaches</b>
	<b><u>René LIST</u></b> ASFINAG Baumanagement GmbH, Austria
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	<b>9:35am - 9:55am</b>
	<b>The Koralmstunnel as a real-world laboratory: Research work and findings during the construction of the Koralmstunnel</b>
	<b><u>Helmut STEINER</u><sup>2</sup>, Michael BACHER<sup>1</sup></b> 1: Graz University of Technology, Institute of Thermodynamics and Sustainable Propulsion Systems, Austria; 2: ÖBB Infrastruktur AG, Austria
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	<b>9:55am - 10:15am</b>
	<b>ASFINAG in case of a blackout – overview and measures</b>
	<b><u>Günter RATTEI</u>, Alice MAHR-SAVERSCHEL</b> ASFINAG SG, Austria
10:15am	<b>Coffee Break</b>
10:45am	
10:45am	<b>Session S1</b> Location: <b>Hall Styria</b>
12:00pm	
	<b>10:45am - 11:10am</b>
	<b>Safe tunnels for smart vehicles: challenges and opportunities of automated driving in road tunnels</b>
	<b><u>Regina SCHMIDT</u><sup>1</sup>, Harald KAMMERER<sup>1</sup>, Georg MAYER<sup>2</sup>, Martin LATZENHOFER<sup>3</sup></b> 1: ILF Consulting Engineers Austria GmbH, Austria; 2: BUNG Ingenieure AG, Germany; 3: Austrian Institute of Technology, Austria
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	<b>11:10am - 11:35am</b>
	<b>Synchronizing bias influence to the walking speed in a smoke filled tunnel experiment</b>
	<b><u>Miho SEIKE</u><sup>1</sup>, Wenhao LI<sup>2</sup>, Takao FUTAGAMI<sup>3</sup></b> 1: Hiroshima University, Japan; 2: Liaodong University, China; 3: Shinshu University, Japan
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	<b>11:35am - 12:00pm</b>
	<b>Impact of group effects on the reaction and escape behaviour of users in road tunnels - results of realistic large group experiments</b>
	<b><u>Frank LEISMANN</u><sup>1</sup>, Christian THIENERT<sup>1</sup>, Markus JENKI<sup>2</sup>, Robert WENIGHOFER<sup>3</sup>, Anne LEHAN<sup>4</sup>, David STÜHLER<sup>2</sup>, David CZUDNOCHOWSKI<sup>2</sup>, Stefan KAUFMANN<sup>4</sup></b> 1: STUVA e.V., Cologne, Germany; 2: CSS – Centre for Security and Society, Freiburg, Germany; 3: Technical University of Leoben, Leoben, Austria; 4: Federal Highway and Transport Research Institute, Bergisch Gladbach, Germany
12:00pm	<b>Lunch</b>
1:30pm	
1:30pm	<b>Session S2</b> Location: <b>Hall Styria</b>
2:45pm	
	<b>1:30pm - 1:55pm</b>
	<b>Digital Twins for road tunnels – expectations meet reality</b>
	<b>Session G2</b> Location: <b>Hall Graz</b>
	<b>1:30pm - 1:55pm</b>
	<b>Methodology for the performance enhancement of longitudinal ventilation systems during transient stage of a fire</b>

**Goetz VOLLMANN<sup>1</sup>, Zuzan AZAD<sup>1</sup>, Lisa VON ROESSING<sup>2</sup>, Benedikt FALTIN<sup>2</sup>, Anne LEHAN<sup>3</sup>, Marius NONO TAMO<sup>3</sup>, Karl HANKE<sup>4</sup>, Annika JODEHL<sup>4</sup>**

1: Ruhr University Bochum, Institute for Tunnelling, Germany; 2: Ruhr University Bochum, Chair for computing in construction, Germany; 3: Federal Highway Research Institute, Germany; 4: BUNG-Group, Germany

**1:55pm - 2:20pm**

**R&D project Tunnelsensorfusion**

**Dietmar HARBAUER**

ASFINAG (Alpenstraßen GmbH), Austria

**2:20pm - 2:45pm**

**Development of a systematic approach for evaluation of the condition of the tunnel equipment**

**Anne LEHAN<sup>1</sup>, Gerhard HUDECEK<sup>2</sup>, Harald KAMMERER<sup>3</sup>, Frank HEIM<sup>4</sup>**

1: Bundesanstalt für Straßen- und Verkehrswesen, Germany; 2: ASFINAG Maut Service GmbH, Austria; 3: ILF Consulting Engineers Austria GmbH, Austria; 4: Die Autobahn GmbH des Bundes, Germany

**2:45pm** **Coffee Break**

**3:15pm**

**3:15pm**

**Session S3**

Location: **Hall Styria**

**4:30pm**

**3:15pm - 3:40pm**

**Ventilation Control Optimisation for Short Longitudinally Ventilated Road Tunnels in Case of Temporary Bidirectional Traffic Operation**

**Oliver HEGER, Gregor SCHMÖLZER**

ILF Consulting Engineers Austria GmbH, Austria

**3:40pm - 4:05pm**

**External smoke movement and its impact on station design – Guidance for ventilation layout**

**Jolyon Alan THOMPSON, Mark GILBEY**

WSP, United Kingdom

**4:05pm - 4:30pm**

**Safety challenges of highway lids in the US**

**Petr POSPISIL<sup>1</sup>, Colin SANTANGELO<sup>2</sup>, Bernd HAGENAH<sup>2</sup>**

1: Tunnel Safety & Ventilation Consultant, United States of Amerika; 2: HNTB Corporation, United States of Amerika

**4:30pm**

**Informative presentation about the Technical Visit**

Location: **Hall Styria**

**4:40pm**

**7:30pm** **Conference Dinner [optional]**

**Miguel DEL MORAL, Alexander GRATCH, Davide D'EUSTACCHIO, Alvaro MENESES, Justo SUAREZ**  
Soler&Palau, Spain

**1:55pm - 2:20pm**

**Performance improvement of a hybrid ventilation system via predictive control**

**Diego ANGELI<sup>1</sup>, Paolo LEVONI<sup>2</sup>, Pietro CINGI<sup>3</sup>, Giovanni Sebastiano BAROZZI<sup>4</sup>, Paolo VERRAZ<sup>5</sup>, Cedric PETITCOLIN<sup>5</sup>**

1: DISMI - University of Modena and Reggio Emilia, Italy; 2: Mimesis s.r.l., Italy; 3: EN&TECH - University of Modena and Reggio Emilia, Italy; 4: DIEF - University of Modena and Reggio Emilia, Italy; 5: TMB-GEIE, Courmayeur (AO), Italy and Chamonix, France

**2:20pm - 2:45pm**

**Enhancements of Tunnel Ventilation System for Road Tunnels adopting Aerodynamic Control & Monitoring Strategies**

**Ka Wing Kelvin CHEUNG<sup>1</sup>, Lung Leo CHAN<sup>1</sup>, Anthony WAN<sup>2</sup>, Hau Ming LEE<sup>2</sup>**

1: AECOM (Asia) Company Limited, Hong Kong; 2: BYME Engineering (Hong Kong) Limited, Hong Kong

**Session G3**

Location: **Hall Graz**

**3:15pm - 3:40pm**

**The best that FEDRO has provided us with in recent years" Experience from 50 operating concepts for Swiss road tunnels**

**Ralf WETZEL<sup>1</sup>, Christian JÄGER<sup>2</sup>**

1: ILF Beratende Ingenieure AG, Switzerland; 2: WSP Ingenieure AG, Switzerland

**3:40pm - 4:05pm**

**Comparison of Conventional Jet Fans and Fans With Shaped Silencers in an Italian Road Tunnel Based on In-Situ Measurements**

**Fathi TARADA<sup>1</sup>, Luca STANTERO<sup>2</sup>, Pier BERTACCHE<sup>1</sup>, Natalino DANIELE BOFFA<sup>3</sup>, Francesco BEZZI<sup>3</sup>, Natalino LUCATELLI<sup>4</sup>**

1: Mosen Ltd, United Kingdom; 2: Risk Design Engineering, Italy; 3: ANAS SpA, Italy; 4: De Cardenas Fans & Service SRL, Italy

**4:05pm - 4:30pm**

**Optimization of the main fans and associated drives for the E4 Stockholm Bypass**

**Peter STEVELINK<sup>3</sup>, Rune BRANDT<sup>1,2</sup>, Fred VAN JAARSVELD<sup>3</sup>**

1: HBI Haerter, Switzerland; 2: Trafikverket, Sweden; 3: Zitron, Netherlands

Date: Wednesday, 22/Apr/2026

8:45am	Session S4 Location: Hall Styria	Session G4 Location: Hall Graz
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10:00am	8:45am - 9:10am <b>Smart Tunnel in Industry 5.0: Improving road tunnel resilience by dynamic risk analysis</b> <u>Alessandro FOCARACCI</u> <sup>1</sup> , <u>Francesca ZACCHEI</u> <sup>2</sup> , <u>Luigi MARTIRANO</u> <sup>2</sup> 1: Prometeoengineering.it S.r.l., Italy; 2: La Sapienza - University of Rome, Italy	8:45am - 9:10am <b>Heat Transmission Between Ground and Tunnel Air for Different Configurations and Uses</b> <u>Juan Manuel SANZ SACRISTÁN</u> Sener Mobility SA, Spain
	9:10am - 9:35am <b>Acceptance criteria for design of longitudinal ventilation systems in road tunnels: theoretical framework</b> <u>Matteo PACHERA</u> , <u>Ranjit CHAUDHARY</u> , <u>Stefaan VERNIEUWE</u> , <u>Jef VAN NEROM</u> Sweco Belgium, Belgium	9:10am - 9:35am <b>Enhancement of the Dispersion of Pollutants Near a Tunnel Ending in a Street Canyon, a CFD Case Study</b> <u>Gabriel REMION</u> <sup>1</sup> , <u>Thierry KUBWIMANA</u> <sup>1</sup> , <u>Bruno VIDAL</u> <sup>1</sup> , <u>Marouane YAGHZAR</u> <sup>1</sup> , <u>Antoine MOS</u> <sup>1</sup> , <u>Romain BOISSAT</u> <sup>2</sup> , <u>Edwige REVELAT</u> <sup>2</sup> , <u>Alexis STEPANIAN</u> <sup>2</sup> 1: Centre d'étude des tunnels, France; 2: AtmoSud, France
	9:35am - 10:00am <b>State of the Art and Lines of Development for the Artu Risk Analysis Software</b> <u>Rugiada SCOZZARI</u> , <u>Michele FRONTERRE</u> Cantene, Italy	9:35am - 10:00am <b>Smoke recirculation at Road-Tunnel Portals</b> <u>Marco TOBLER</u> , <u>Marco BETTELINI</u> , <u>Raphaël DEFERT</u> Amberg Engineering, Switzerland
10:00am	Coffee Break	
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10:30am		
10:30am	Session S5 Location: Hall Styria	Session G5 Location: Hall Graz
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11:45am	10:30am - 10:55am <b>Safety challenges of highway lids in the US</b> <u>Petr POSPISIL</u> , <u>Colin Santangelo</u> , <u>Bernd Hagenah</u> HNTB corp., United States of America	10:30am - 10:55am <b>On smoke detection systems in road tunnels - a quantitative comparison</b> <u>Simon FREY</u> <sup>1</sup> , <u>Rolf RUCKSTUHL</u> <sup>2</sup> , <u>Benjamin POLLINGER</u> <sup>2</sup> , <u>Samuel GEHRIG</u> <sup>2</sup> , <u>Reto BUCHMANN</u> <sup>3</sup> , <u>Bernard CRAUSAZ</u> <sup>4</sup> 1: HBI Haerter, Switzerland; 2: AFRY Schweiz AG, Switzerland; 3: buntech GmbH, Switzerland; 4: Federal Roads Administration FEDRO, Switzerland
	10:55am - 11:20am <b>Implementation of low-tech and lean-tech concepts in road tunnels for a better sustainability</b> <u>Olivier MARTINETTO</u> , <u>Florent GUIRAL</u> Egis, France	10:55am - 11:20am <b>Ventilation System Upgrade for Huguenot Tunnel in South Africa</b> <u>Tiago MASSINGUE</u> <sup>1</sup> , <u>Julia KEARNS</u> <sup>2</sup> 1: The South African National Roads Agency SOC Ltd, South Africa; 2: SMEC South Africa, South Africa
	11:20am - 11:45am <b>Improving Energy Efficiency in Road Tunnels</b> <u>Lorenz KIRCHEBNER</u> <sup>1</sup> , <u>Alexander WIERER</u> <sup>1</sup> , <u>Christof Sistenich</u> <sup>2</sup> 1: crypta.sec conceptum GmbH, Austria; 2: Bundesanstalt für Straßen- und Verkehrswesen	11:20am - 11:45am <b>Web-SCADA: A Web-based Supervisory Control and Data Acquisition Platform for Road Tunnel Safety in Japan</b> <u>Mathis RUFFIEUX</u> <sup>1</sup> , <u>Jean ROUGE</u> <sup>1</sup> , <u>Yen-Hung LAI</u> <sup>1</sup> , <u>Leon DICKE</u> <sup>1</sup> , <u>Masahide NAKAMURA</u> <sup>2</sup> , <u>Alan VARDY</u> <sup>3</sup> 1: Sohatsu Systems Laboratory Inc., Japan; 2: Kobe University, Kobe, Japan; 3: University of Dundee, Dundee, Scotland, United Kingdom
11:45am	Lunch	
-		
1:15pm		

<p><b>1:15pm</b> - <b>2:30pm</b></p>	<p><b>Session S6</b> Location: <b>Hall Styria</b></p> <p><b>1:15pm - 1:40pm</b> <b>Towards Accurate Tunnel Fire Simulations: Grid Sensitivity and Les Model Comparison in Fire Dynamics Simulator</b> <b>Mahfuz SARWAR</b> Fire Rescue Victoria, Australia</p>	<p><b>Session G6</b> Location: <b>Hall Graz</b></p> <p><b>1:15pm - 1:40pm</b> <b>Experimental Investigation of Thermal Runaway in Lithium-Ion Batteries: Implications for Tunnel Safety and Structural Integrity</b> <b>Davide PAPURELLO<sup>1</sup>, Luca MUSSO<sup>1</sup>, Carlo BARBETTA<sup>2</sup>, Romano BORCHIELLINI<sup>1</sup>, Maciej SOBOTKA<sup>3</sup>, Daniel FRUHWIRT<sup>4</sup></b> 1: Energy Center, Politecnico di Torino, Via Paolo Borsellino 38/16, 10138, Turin, Italy.; 2: Systemair GmbH, Germany/Systemair Srl, Italy.; 3: Wrocław University of Science and Technology, Faculty of Civil Engineering, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland.; 4: Graz University of Technology, Institute of Thermodynamics and Sustainable Propulsion Systems, Austria.</p>
<p><b>1:40pm - 2:05pm</b></p>	<p><b>On the Flow Resistance of Tunnel Fires – Validation by Full-Scale Fire Tests</b> <b>Ingo RIESS<sup>1</sup>, Rajdeep DEB<sup>2</sup>, Alex WEBER<sup>2</sup></b> 1: Riess Ingenieur-GmbH, Switzerland; 2: OST Ostschweizer Fachhochschule, Switzerland</p>	<p><b>1:40pm - 2:05pm</b></p>
<p><b>2:05pm - 2:30pm</b></p>	<p><b>tbd</b> <b>Conrad STACEY</b> Stacey Agnew, Australia</p>	<p><b>1:40pm - 2:05pm</b></p>
<p><b>2:30pm</b> - <b>3:00pm</b></p>	<p><b>Coffee Break</b></p>	<p><b>Consequences from large BEV fires in tunnels - results of full-scale testing</b> <b>Daniel Klaus FRUHWIRT<sup>1</sup>, Alexander KORES<sup>1</sup>, Bastiaan LOTTMAN<sup>2</sup>, Simon FREY<sup>3</sup>, Christoh SCHNEIDER<sup>4</sup>, Robert GALLER<sup>5</sup>, Robert WENIGHOFER<sup>5</sup>, Christian THIENERT<sup>6</sup>, Frank LEISMANN<sup>6</sup></b> 1: Graz University of Technology, Austria; 2: ILF Consulting Engineers Austria GmbH, Austria; 3: HBI Haerter AG, Switzerland; 4: WSP, Switzerland; 5: University of Leoben, Austria; 6: Studiengesellschaft für unterirdische Verkehrsanlagen e.V., Germany</p>
<p><b>3:00pm</b> - <b>4:15pm</b></p>	<p><b>Session S7</b> Location: <b>Hall Styria</b></p> <p><b>3:00pm - 3:25pm</b></p>	<p><b>Influence of the Tunnel Cross-Section on Tunnel Aerodynamics</b> <b>Johannes RODLER, Andreas HUBER, Verena LANGNER</b> Gruner GmbH, Austria</p>
<p><b>3:25pm - 3:50pm</b></p>	<p><b>Air Speeds Near Services on Tunnel Walls</b> <b>Mark GILBEY<sup>1</sup>, Dami AJEWOLE<sup>1</sup>, David SOPER<sup>2</sup>, Mike JESSON<sup>2</sup>, Ian STRUDWICK<sup>3</sup></b> 1: WSP Ltd, United Kingdom; 2: University of Birmingham, United Kingdom; 3: HS2 Ltd, United Kingdom</p>	<p><b>3:25pm - 3:50pm</b></p>
<p><b>3:50pm - 4:15pm</b></p>	<p><b>Train-induced aerodynamic loads acting on installations of Granitztal Tunnel</b> <b>Michael REITERER</b> REVOTEC, Austria</p>	<p><b>3:50pm - 4:15pm</b></p>
<p><b>4:15pm</b> - <b>4:25pm</b></p>	<p><b>Closing Remarks</b> Location: <b>Hall Styria</b></p>	

**Date: Thursday, 23/Apr/2026**

8:30am | Technical Visit [optional]

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3:00pm