

13TH INTERNATIONAL CONFERENCE **TUNNEL SAFETY AND VENTILATION** APRIL 21-23, 2026 | GRAZ, AUSTRIA

Conference Agenda

Date: Monday, 20/Apr/2026

6:00pm	Get-together [optional]
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9:00pm	

Date: Tuesday, 21/Apr/2026

8:00am Registration

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9:00am

9:00am Opening Session

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Location: **Hall Styria**

9:15am

9:15am Keynote Speakers

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Location: **Hall Styria**

10:15am

9:15am - 9:35am

Sustainability of tunnel operation: new approaches

René LIST

ASFINAG Baumanagement GmbH, Austria

9:35am - 9:55am

The Koralmtunnel as a real-world laboratory: Research work and findings during the construction of the Koralmtunnel

Helmut STEINER², Michael BACHER¹

1: Graz University of Technology, Institute of Thermodynamics and Sustainable Propulsion Systems, Austria; 2: ÖBB Infrastruktur AG, Austria

9:55am - 10:15am

ASFINAG in case of a blackout – overview and measures

Günter RATTE, Alice MAHR-SAVERSCHER

ASFINAG SG, Austria

10:15am Coffee Break

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10:45am

10:45am Session S1

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Location: **Hall Styria**

12:00pm

10:45am - 11:10am

Safe tunnels for smart vehicles: challenges and opportunities of automated driving in road tunnels

Regina SCHMIDT¹, Harald KAMMERER¹, Georg MAYER², Martin LATZENHOFER³

1: ILF Consulting Engineers Austria GmbH, Austria; 2: BUNG Ingenieure AG, Germany; 3: Austrian Institute of Technology, Austria

11:10am - 11:35am

Synchronizing bias influence to the walking speed in a smoke filled tunnel experiment

Miho SEIKE¹, Wenhao LI², Takao FUTAGAMI³

1: Hiroshima University, Japan; 2: Liaodong University, China; 3: Shinshu University, Japan

11:35am - 12:00pm

Impact of group effects on the reaction and escape behaviour of users in road tunnels - results of realistic large group experiments

Frank LEISMANN¹, Christian THIENERT¹, Markus JENKI², Robert WENIGHOFER³, Anne LEHAN⁴, David STÜHLER², David CZUDNOCHOWSKI², Stefan KAUFMANN⁴

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 Lunch

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1:30pm

1:30pm Session S2

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Location: **Hall Styria**

2:45pm

1:30pm - 1:55pm

Digital Twins for road tunnels – expectations meet reality

Session G2

Location: **Hall Graz**

1:30pm - 1:55pm

Methodology for the performance enhancement of longitudinal ventilation systems during transient stage of a fire

	<p><u>Goetz VOLLMANN</u>¹, Zuzan AZAD¹, Lisa VON ROESSING², Benedikt FALTIN², Anne LEHAN³, Marius NONO TAMO³, Karl HANKE⁴, Annika JODEHL⁴ 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</p>	<p><u>Miguel DEL MORAL</u>, Alexander GRATCH, Davide D'EUSTACCHIO, Alvaro MENESES, Justo SUAREZ Soler&Palau, Spain</p>
	<p>1:55pm - 2:20pm R&D project Tunnelsensorfusion <u>Dietmar HARBAUER</u> ASFINAG (Alpenstraßen GmbH), Austria</p>	<p>1:55pm - 2:20pm Performance improvement of a hybrid ventilation system via predictive control <u>Diego ANGELI</u>¹, Paolo LEVONI², Pietro CINGI³, Giovanni Sebastiano BAROZZI⁴, Paolo VERRAZ⁵, Cedric PETITCOLIN⁵ 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</p>
	<p>2:20pm - 2:45pm Development of a systematic approach for evaluation of the condition of the tunnel equipment <u>Anne LEHAN</u>¹, Gerhard HUDECEK², Harald KAMMERER³, Frank HEIM⁴ 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</p>	<p>2:20pm - 2:45pm Enhancements of Tunnel Ventilation System for Road Tunnels adopting Aerodynamic Control & Monitoring Strategies <u>Ka Wing Kelvin CHEUNG</u>¹, Lung Leo CHAN¹, Anthony WAN², Hau Ming LEE² 1: AECOM (Asia) Company Limited, Hong Kong; 2: BYME Engineering (Hong Kong) Limited, Hong Kong</p>
2:45pm - 3:15pm	Coffee Break	
3:15pm - 4:30pm	<p>Session S3 Location: Hall Styria</p> <p>3:15pm - 3:40pm Ventilation Control Optimisation for Short Longitudinally Ventilated Road Tunnels in Case of Temporary Bidirectional Traffic Operation <u>Oliver HEGER</u>, Gregor SCHMÖLZER ILF Consulting Engineers Austria GmbH, Austria</p>	<p>Session G3 Location: Hall Graz</p> <p>3:15pm - 3:40pm The best that FEDRO has provided us with in recent years” Experience from 50 operating concepts for Swiss road tunnels <u>Ralf WETZEL</u>¹, Christian JÄGER² 1: ILF Beratende Ingenieure AG, Switzerland; 2: WSP Ingenieure AG, Switzerland</p>
	<p>3:40pm - 4:05pm External smoke movement and its impact on station design – Guidance for ventilation layout <u>Jolyon Alan THOMPSON</u>, Mark GILBEY WSP, United Kingdom</p>	<p>3:40pm - 4:05pm Comparison of Conventional Jet Fans and Fans With Shaped Silencers in an Italian Road Tunnel Based on In-Situ Measurements <u>Fathi TARADA</u>¹, Luca STANTERO², Pier BERTACCHE¹, Natalino DANIELE BOFFA³, Francesco BEZZI³, Natalino LUCATELLI⁴ 1: Mosen Ltd, United Kingdom; 2: Risk Design Engineering, Italy; 3: ANAS SpA, Italy; 4: De Cardenas Fans & Service SRL, Italy</p>
	<p>4:05pm - 4:30pm Safety challenges of highway lids in the US <u>Petr POSPISIL</u>¹, Colin SANTANGELO², Bernd HAGENAH² 1: Tunnel Safety & Ventilation Consultant, United States of Amerika; 2: HNTB Corporation, United States of Amerika</p>	<p>4:05pm - 4:30pm Optimization of the main fans and associated drives for the E4 Stockholm Bypass <u>Peter STEVELINK</u>³, Rune BRANDT^{1,2}, Fred VAN JAARSVELD³ 1: HBI Haerter, Switzerland; 2: Trafikverket, Sweden; 3: Zitron, Netherlands</p>
4:30pm - 4:40pm	<p>Informative presentation about the Technical Visit Location: Hall Styria</p>	
7:30pm	Conference Dinner [optional]	

Date: Wednesday, 22/Apr/2026

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

1:15pm - 2:30pm	Session S6 Location: Hall Styria 1:15pm - 1:40pm Towards Accurate Tunnel Fire Simulations: Grid Sensitivity and Les Model Comparison in Fire Dynamics Simulator <u>Mahfuz SARWAR</u> Fire Rescue Victoria, Australia	Session G6 Location: Hall Graz 1:15pm - 1:40pm Experimental Investigation of Thermal Runaway in Lithium-Ion Batteries: Implications for Tunnel Safety and Structural Integrity <u>Davide PAPURELLO¹</u> , <u>Luca MUSSO¹</u> , <u>Carlo BARBETTA²</u> , <u>Romano BORCHIELLINI¹</u> , <u>Maciej SOBOTKA³</u> , <u>Daniel FRUHWIRT⁴</u> 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.
	1:40pm - 2:05pm On the Flow Resistance of Tunnel Fires – Validation by Full-Scale Fire Tests <u>Ingo RIESS¹</u> , <u>Rajdeep DEB²</u> , <u>Alex WEBER²</u> 1: Riess Ingenieur-GmbH, Switzerland; 2: OST Ostschweizer Fachhochschule, Switzerland	1:40pm - 2:05pm Consequences from large BEV fires in tunnels - results of full-scale testing <u>Daniel Klaus FRUHWIRT¹</u> , <u>Alexander KORES¹</u> , <u>Bastiaan LOTTMAN²</u> , <u>Simon FREY³</u> , <u>Christoh SCHNEIDER⁴</u> , <u>Robert GALLER⁵</u> , <u>Robert WENIGHOFER⁵</u> , <u>Christian THIENERT⁶</u> , <u>Frank LEISMANN⁶</u> 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
	2:05pm - 2:30pm tbd <u>Conrad STACEY</u> Stacey Agnew, Australia	
2:30pm - 3:00pm	Coffee Break	
3:00pm - 4:15pm	Session S7 Location: Hall Styria 3:00pm - 3:25pm Influence of the Tunnel Cross-Section on Tunnel Aerodynamics <u>Johannes RODLER</u> , Andreas HUBER , Verena LANGNER Gruner GmbH, Austria	
	3:25pm - 3:50pm Air Speeds Near Services on Tunnel Walls <u>Mark GILBEY¹</u> , <u>Dami AJEWOLE¹</u> , <u>David SOPER²</u> , <u>Mike JESSON²</u> , <u>Ian STRUDWICK³</u> 1: WSP Ltd, United Kingdom; 2: University of Birmingham, United Kingdom; 3: HS2 Ltd, United Kingdom	
	3:50pm - 4:15pm Train-induced aerodynamic loads acting on installations of Granitztal Tunnel <u>Michael REITERER</u> REVOTEC, Austria	
4:15pm - 4:25pm	Closing Remarks Location: Hall Styria	

Date: Thursday, 23/Apr/2026

8:30am - Technical Visit [optional]
3:00pm