



LJUBLJANA, 22-24 JUNE 2026



12th BCRRA
2026
Slovenia

12th International Conference
on the Bearing Capacity of Roads,
Railways and Airfields



12th BCRRRA
2026
Slovenia

INVITED LECTURES

22. 6. 2026
Linhart Hall

Monday, 22 June 2026



12th BCRRA
2026
Slovenia

INVITED LECTURES

22. 6. 2026
Linhart Hall

2.1 RASMUS S. NORDAL LECTURE

09:45–10:45

Prof. Emer. Guy Doré

Reassessing frost action in M-E pavement design

Moderator: Dr Rabbira Saba Garba

3.1 DISTINGUISHED LECTURE

11:15–12:15

Prof. Imad L. Al-Qadi

Innovative flexible pavements: Energy-efficient and resilient for future mobility

Moderator: Dr Aleš Žnidarič

5.1 KEYNOTE LECTURE

15:45–16:45

Prof. Lev Khazanovich

Advancements in mechanistic–empirical design of jointed concrete pavements in the U.S.

Moderator: Assoc. Prof. Robert Rijavec



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4.1

In situ evaluation and performance prediction for pavements

22. 6. 2026 | 13:45–15:15
Linhart Hall

Moderator:

Dr Timo Saarenketo

William D. Carruth

In-situ evaluation of load bearing capacity and cohesion gain assessment tools for full depth reclamation

Siva Ram Karumanchi

Evaluation of long-term flexible pavement performance using field test data and numerical model validation

Erol Tutumluer

From linear elastic to advanced analysis approaches: A critical review of backcalculation methods in pavement engineering

Abubeker Ahmed

Evaluation of asphalt damage criteria for airport pavement strength rating system in cold climate

Hong Zhang

Evaluation of traffic speed deflection devices for measuring bearing capacity of Dutch highways

.....

Poster presentation: Amil Kumar Baditha

Impact of temperature and seasonal correction factors of falling weight deflectometer (FWD) data on pavement performance prediction



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4.2 **Asphalt mixes**

22. 6. 2026 | 13:45–15:15
Kosovel Hall

Moderator:
Professor Serdal Terzi

Sara Carlucci

Performance characterization of warm mix asphalt for porous wearing courses and base layers produced with highly polymer modified bitumen

Chiara Riccardi

Recycling aluminum processing dusts in hot mix asphalt: Mechanical and environmental performance of filler-modified mixtures

Saeed Vosoughian

Experimental characterization of damage evolution in asphalt concretes: Insights into virgin and polymer-modified binders

Akash Bajaj

Characterizing Low Temperature Cracking Potential of Asphalt Airfield Pavements

.....

Poster presentation: Lidija Ržek

Practical experiences of implementing warm mix asphalt with foamed bitumen: The path to better sustainability and reduced CO2 footprint

Min-Chih Liao

Performance Characteristics of Rheological Behavior and Chemical Properties for Recovered Asphalt Binders

Abhishek Mittal*

Moisture and rutting susceptibility of high RAP asphalt mixes containing WMA additive



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4.3

Structural design methods

22. 6. 2026 | 13:45–15:15
M1 Hall

Moderator:

Dr Sabine Leischner

Rabbira Garba Saba

Development and utilization of material database in mechanistic-empirical pavement design

David Brill

Development of top-down cracking design methodology for corner breaks in rigid airport pavements

Sara Anastasio

A comparative analysis of pavement design with a traditional empirical method and an advanced analytical system

Greg White

Comparison of thickness determination methods for flexible aircraft pavements

Rami Chkaiban

AASHTOWare Pavement ME Design: Advancing Pavement Performance Prediction with New Models and Software Enhancements



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4.4

Climate change and resilience of infrastructure

22. 6. 2026 | 13:45–15:15
Štih Hall

Moderator:

Dr Stanislav Lenart

Sundis M.S. Taher

A review-based assessment of the thermal and environmental performance of titanium dioxide–modified permeable asphalt pavements

Murilo Freitas Frazao

Asphalt pavements' temperature profile prediction combining a numerical model with weather data: A French case study

Josef Keller / Ringo Reboucas

Improving the resilience of road infrastructure to extreme weather events through data-based development of innovative construction methods

Helge Mork

Evaluation of distress development under future climate for Norwegian conditions

Laszlo Petho

Optimising warm mix asphalt production through real-time on-site temperature data collection and statistical analysis



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4.5

Case histories

22. 6. 2026 | 13:45–15:15
M3+M4 Hall

Moderator:
Per Otto Aursand

Alejandra M. Vega

Case studies of evaluation and maintenance procedures on unpaved stabilized surfaces

Papa Masseck Thiam

Improving the transportation efficiency of the Canadian forest industry while minimizing pavement impacts

Allan Bradley

Learnings from 35 years of unpaved roads research: Challenges and responses from a Canadian perspective

Amparo Guillén

In-situ monitoring of traffic loading in railway track by inserting innovative smart pads

Calle Ossbahr

Investigation of structural capacity and surface defects on municipal roads in metropolitan area of Stockholm, Sweden

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Poster presentations: Zsolt Boros

Change in state of defects on airport pavements after introduction of category E aircraft operations

Dalibor Udovič

Expansion Of Landing Areas at The Dubrovnik Airport, Croatia



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6.1

In situ evaluation and performance prediction for pavements

22. 6. 2026 | 16:50–18:20
M3+M4 Hall

Moderator:

Dr David Malmgren-
Hansen

Vasilios Papavasiliou

Upgrade of existing pavement using modified mixes

José Neves

A full-scale experimental facility for continuous monitoring of unbound granular materials in road pavements

Alexandra Spilker

Even road surfaces – A way to extend pavement service life

Mitja Jurgele

Long-term performance assessment of pavement structures with foam bitumen-stabilized layers using deflection measurements

Hong Zhang

Use of machine learning technique for correlating Traffic Speed Deflectometer measurements with Falling Weight Deflectometer

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Poster presentation: Halil Ceylan

Field evaluation of chemically stabilized granular road performance



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6.2

Asphalt mixes

22. 6. 2026 | 16:15–18:20
Kosovel Hall

Moderator:

Professor Silvia Caro

Sabine Leischner

Evaluation of ageing effects in polymer-modified bitumen using rheological, chemical, and morphological analyses

Filippo Giammaria Praticò

Dry addition of crumb rubber in dense graded friction course mixtures: effects on stiffness, fatigue, and rutting resistance

Erol Tutumluer

Assessment of composite modulus in Otta seal surfacing utilizing aggregate quarry by-products

Elena Scibilia

Assessing the quality of fines in asphalt aggregates: Applicability of methylene blue and sand equivalent methods for Norwegian crushed rock

Akash Bajaj

Fracture Characteristics of Cored Brazil Disk Geometry

.....

Poster presentation: Mathieu Galiana

Technical evaluation of wearing course layer containing 40% RAP on the national roadway network

Jian-Shiuh Chen

Recycled Asphalt Mixtures: Lab, Plant, and Field Properties



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6.3

Structural design methods

22. 6. 2026 | 16:50–18:20
M1 Hall

Moderator:

Professor Imad
L. Al-Qadi

Olivier Chupin

An innovative approach for the design of cement-stabilized lateritic gravel pavements

Sergio Hernan Manjarres Paredes

Effect of temperature on fatigue-based rational pavement design

Daniela Neufeld

Modeling of the temperature distribution in asphalt pavements

Konstantina Georgouli

Autonomous trucks and pavement infrastructure: Emerging challenges and considerations

Brynhild Snilsberg

VegDim: A Digital System for Pavement Design and Analysis

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Poster presentation: Antonio Guimarães

A mechanistic–empirical method review for design and structural evaluation of railway pavements in Brazil

Rolf Rabe

Evaluation of measured data from a full-scale pavement test to validate simulation computations



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6.4

Climate change and resilience of infrastructure

22. 6. 2026 | 16:50–18:20
Štih Hall

Moderator:

Professor Tatsuya
Ishikawa

Paulina Leiva-Padilla

Evaluation of pavement material hydraulic performance using a laboratory-scale rainfall simulation prototype

Guanwen Liang

Frost-heave and thaw-settlement experiments using a full-scale physical model of high-speed railway subgrade

Giorgia Sanvitalea

Evaluating asphalt pavement surface temperatures using thermal satellite remote sensing

Richard Koschuch

Real-Time Rockfall Monitoring for Street Safety Using Pulse-Doppler Radar at the Example for the E652 at Tržič, Slovenia

Michael Atukunda

Impact of Wetting and Drying Cycles associated with Climate Change on Soil Erodibility: Novel Insights for Embankments Supporting Transport Infrastructure



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6.5 **Construction**

22. 6. 2026 | 16:50–18:20
Alma Karlin Hall

Moderator:
Dr Pierre Hornych

Greg White

Compacting and proving deep sand fills for airport pavements constructed for large modern aircraft loads

Marko Brezigar

Bridging karst features: A major challenge in tunnel construction

Miguel Del Sol Sánchez

From road asphalt to sustainable sub-ballast for railroad: Upcycling RAP into a vibration-mitigating ballast base

Rok Fojkar

Main Apron Renovation Works at Ljubljana Airport

Franc Švegl

Karst Phenomena and the Use of BIM in the Construction of the Second Track Railway Line Divača–Koper

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Poster presentations: Tomohito Hori

Development of a bearing-capacity testing apparatus using the self-weight of construction machinery



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INVITED LECTURES

23. 6. 2026
Linhart Hall

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INVITED LECTURES

23. 6. 2026
Linhart Hall

8.1 KEYNOTE LECTURE

09:00–10:00

Prof. Silvia Caro

Understanding self-healing technologies in asphalt mixtures to improve pavement durability

Moderator: Prof. Andreas Loizos

11.1 KEYNOTE LECTURE

15:05–16:05

Dr David R. Brill

The challenge of data for airport pavement design

Moderator: Prof. Erol Tutumluer



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9.1

In situ evaluation and performance prediction for pavements

23. 6. 2026 | 10:05–11:35
Linhart Hall

Moderator:

Professor Han-Lin
Wang

Mohammad A. Bidgoli

Temperature-corrected pavement deflection measurement using embedded sensors

Jukka Isometsä

Loading impact of super heavy trucks on thin paved road structures

David Brill

Allowable overloads on flexible airport pavements on clay subgrades considering subgrade stress ratio

Lillian Uthus Mathisen

Development of new types of sustainable fiber for use in asphalt production

Tim Schrödter

Influence of temperature reduced asphalt pavement on the performance of asphalt and bearing capacity of roads

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Poster presentation: Runyi Cai*

Dynamic Load Identification of Oblique Prestressed Pavement Based on Intelligent Steel Strands

Marina Al Bacha*

Monitoring the behaviour of full-scale pavements under moving loads using distributed optical fiber sensors



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9.2

Asphalt mixes

23. 6. 2026 | 10:05–11:35
Kosovel Hall

Moderator:

Professor Christina
Plati

Aksel Seitllari

Ruggedness study of the three-point bending cylinder (3PBC) test for asphalt mixture fatigue performance assessment

Stavros Kalampokis

Laboratory characterisation of biochar-modified bitumen: A combined rheological and spectroscopic approach

Mofreh Saleh

Evaluating cracking resistance of fibre-reinforced asphalt mixes using a repeated cyclic SCB test

Ana Karoliny Lemos Bezerra

Non-destructive linear viscoelastic characterization of bituminous mixtures by impact resonance test

Gustavo Câmara

Capsule-driven self-healing in asphalt pavements: A DEM numerical approach to smarter infrastructure

.....

Poster presentation: Carl Lenngren

Testing Balanced Design in the Field



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9.3

Structural design methods

23. 6. 2026 | 10:05–11:35
M1 Hall

Moderator:
Dr Dirk Jansen

Damian Suarez

Updating perpetual pavement design criteria: from legacy practices to strain ratio-based methodologies

Olivier Chupin

Considering a friction-based approach to model asphalt pavement interfaces

Marko Peltomäki

Evaluating the technical functionality of railway track transition zones

Andre Paixao

Numerical modelling of EAF slag and recycled rubber mixtures in railway infrastructures

Greg White

Review and improvement of FAARFIELD software for thickness design in the Australian context

.....

Poster presentation: Tong Zhou

Deformation evolution of existing double-lane shield tunnels under close adjacent disturbances: Monitoring analysis and theoretical interpretation



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9.4

Evaluation of deflection measurement

23. 6. 2026 | 10:05–11:35
Štih Hall

Moderator:
Professor Erol
Tutumluer

Arman Hamidi

A temperature and speed correction factor for the fatigue strain index obtained from traffic speed deflectometer

Tatek Fekadu Yideti (Ph.D.)

Evaluation of pavement layer thickness using ground penetrating radar for back-calculation of elastic modulus

Klavs Olsen

Structural evaluation of continuously reinforced concrete pavements with traffic-speed deflectometer technology

Paulina Leiva-Padilla

Parametric study of signal processing techniques for pavement deflection monitoring with geophones

Gerardo Flintsch

Independent Verification of TSD Deflection Velocity Using Non-Contact LDVs: Methodology and Comparative Results

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Poster presentation: Jerome Daleiden

ARRB Systems Global Initiatives to Advance Comprehensive Pavement Assessments

Andrejs Taranovs

Assessment of Load-Deflection Linearity Between 40 kN and 50 kN in Falling Weight Deflectometer Measurements



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9.5

Rehabilitation and maintenance

23. 6. 2026 | 10:05–11:35
M3+M4 Hall

Moderator:
Professor Andreas
Loizos

Sara Anastasio

Evaluation of the effect of strengthening works on the road service life

Timo Saarenketo

Detecting early phase microcracking in asphalt pavements

Trond Østen

Improving drainage by design and machine control to increase pavement service life on national roads in Norway

Sigurdur Erlingsson

Application of machine learning techniques for predicting municipal pavement condition index

Sara Anastasio

Assessing the impacts of reduced studded tire use on pavement friction and surface condition

.....

Poster presentations: Tim Alte-Teigeler

Improving bearing capacities of pavements by stabilising concrete slabs with silicate resins



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10.2

Concrete materials

23. 6. 2026 | 12:05–13:35
Kosovel Hall

Moderator:
Professor Lev
Khazanovich

Greg White

Theoretical quantification of sustainable concrete options for airport pavements

Lucio Salles de Salles

Nondestructive evaluation of concrete pavement construction uniformity: Case study

Julie Marie Vandenbossche

Evaluating Corrosion Development on Dowel Bars in Concrete Pavements

Mohamed Mostafa Hassan Mostafa

Enhancing Sustainable Concrete with Manganese Steel Slag Aggregates: Performance, Durability, and Economic Viability

.....

Poster presentation: Jani Kosec

Concrete pavement on the Vrhnika–Logatec motorway section: 15 years of structural performance evaluation



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10.3

Design in frost affected areas

23. 6. 2026 | 12:05–13:35
M1 Hall

Moderator:

Professor Guy Doré

Jean-Pascal Bilodeau

Seasonal damage analysis of foam glass aggregates insulation in the flexible pavement layered system

Wade Lein / Andrew Bernier

Dynamic and resilient modulus of frost-susceptible soils: Innovations for cold climate engineering

James Leak

A review of thaw weakening effects on the stiffness modulus of soils with different gradations using grading entropy coordinates

Dina Kuttah

Impact of freeze-thaw cycles on the dynamic CBR of unstabilized and enzyme-stabilized subgrade soil



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10.4 **Evaluation of** **deflection** **measurement**

23. 6. 2026 | 12:05–13:35
Štih Hall

Moderator:

Dr Mehdi Kalantari

Per Otto Aursand

Implementing structural data in pavement maintenance of national roads in Norway

Yasmine El Khattabi

Statistical analysis of dynamic force calibration of falling weight deflectometer through interlaboratory comparison testing

Barbara Esser

Correlations between dynamic axle loads induced by longitudinal unevenness and bearing capacity measurements using the TSD

Matthias Scheidig

Evaluation of the load-bearing capacity of a pavement with semi-rigid surface course

José Neves

Precision analyses of deflection measurements in FWD proficiency tests

.....

Poster presentation: Anil Kumar Baditha

Determine the impact of temperature and seasonal correction factors on effective structural number calculated based on Falling Weight Deflectometer (FWD) data

Ramez Hajj

Sensitivity evaluation of temperature correction techniques for TSD data



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10.5 **Rehabilitation and** **maintenance**

23. 6. 2026 | 12:05–13:35
M3+M4 Hall

Moderator:

Dr Rabbira Garba
Saba

David Brill

Application of artificial intelligence in backcalculation of airfield pavement materials

Asmus Skar Christiansen

Mapping laser crack measurement system data to manual pavement condition ratings

Eyal Levenberg

Optimal partitioning of pavement data into homogeneous sections

Luca Bianchini Ciampoli

Airport runway pavement management via immersive XR for remote sensing deformation data interpretation

Sigurdur Erlingsson

Forecasting municipal pavement condition index through sigmoid deterioration model

.....

Poster presentations: Fanyu Xia

Numerical and experimental optimization of pre-burial design for navigation lighting cables in airport asphalt pavement retrofitting

Ashish Walia

Evaluating Structural Reserves Under the ACR-PCR Framework: An Integrated NDT and Forensic Case Study

Atish Nadkarni

Evaluation of MEPDG Damaged Moduli Approach Using Viscoelastic Back-Calculated Damaged Moduli



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12.1 **Poster Session**

23. 6. 2026 | 16:10–17:10
Foyer II

Anil Kumar Baditha

Impact of temperature and seasonal correction factors of falling weight deflectometer (FWD) data on pavement performance prediction

Halil Ceylan

Field evaluation of chemically stabilized granular road performance

Runyi Cai *

Dynamic Load Identification of Oblique Prestressed Pavement Based on Intelligent Steel Strands

Marina Al Bacha *

Monitoring the behaviour of full-scale pavements under moving loads using distributed optical fiber sensors

Luca Bianchini Ciampoli

Enhancing Railway Ballast Monitoring with GPR Attribute Analysis

Dominik Rudisch

Numerical investigations on the influence of radius and track gauge on wheel-rail contact in narrow curves



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12.1

Poster Session

23. 6. 2026 | 16:10–17:10
Foyer II

Lidija Ržek

Practical experiences of implementing warm mix asphalt with foamed bitumen: The path to better sustainability and reduced CO2 footprint

Min-Chih Liao

Performance Characteristics of Rheological Behavior and Chemical Properties for Recovered Asphalt Binders

Mohammed Belmokhtar

Technical evaluation of wearing course layer containing 40% RAP on the national roadway network

Jian-Shiuh Chen

Recycled Asphalt Mixtures: Lab, Plant, and Field Properties

Carl Lenngren

Testing Balanced Design in the Field

Jani Kosec

Concrete pavement on the Vrhnika–Logatec motorway section: 15 years of structural performance evaluation



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12.1

Poster Session

23. 6. 2026 | 16:10–17:10
Foyer II

Yuanjie Xiao

Investigating fracture cracking and healing mechanisms of cement-treated recycled aggregate materials via Peridynamics

Jhunarani Ojha

Effect of Cyclic Wet-Dry Conditions on the Strength Behavior of Cement Stabilized Full-Depth Reclaimed (FDR) Road Materials

Antonio Guimarães

A mechanistic–empirical method review for design and structural evaluation of railway pavements in Brazil

Rolf Rabe

Evaluation of measured data from a full-scale pavement test to validate simulation computations

Tong Zhou

Deformation evolution of existing double-lane shield tunnels under close adjacent disturbances: Monitoring analysis and theoretical interpretation

Zhenghan Hu

Parametric analysis and evolution characteristics of horizontal soil arching in single-row piles under lateral loading



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12.1

Poster Session

23. 6. 2026 | 16:10–17:10
Foyer II

Yao Shan

Energy dissipation of ISO standard dry sand under high-frequency intermittent train loading: Experimental insights from modified triaxial shearing apparatus

Yuanjie Xiao

Quantitative Prediction of Ballast Particle Abrasion Based on Surrogate Modeling and Machine Learning

M. Kaan Etikan

Discrete Element Analysis of the Response of Unbound Granular Materials Consisting Marginal Road Materials under Triaxial Loading

Ignacio Artamendi

Laboratory assessment of mechanical degradation and service life of railway ballast

Jerome Daleiden

ARRB Systems Global Initiatives to Advance Comprehensive Pavement Assessments

Andrejs Taranovs

Assessment of Load-Deflection Linearity Between 40 kN and 50 kN in Falling Weight Deflectometer Measurements



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12.1 **Poster Session**

23. 6. 2026 | 16:10–17:10
Foyer II

Anil Kumar Baditha

Determine the impact of temperature and seasonal correction factors on effective structural number calculated based on Falling Weight Deflectometer (FWD) data

Ramez Hajj

Sensitivity evaluation of temperature correction techniques for TSD data

Mansour Solaimanian

Impact of Moisture Content on Light Weight Deflectometer (LWD) Response for Quality Control of Compacted Subgrade & Base Material

Jerome Daleiden

Incorporation of Structural Response in Pavement Management

Jacek Sudyka

Prediction of asphalt layer temperature: RNN and XGBoost as the basis of a proposed hybrid model

Ali Foroutan Mirhosseini

Unraveling frost and thaw effects: Temperature normalization of FWD deflection basins for structural assessment of Norwegian pavements



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12.1 **Poster Session**

23. 6. 2026 | 16:10–17:10
Foyer II

Zsolt Boros

Knowledge from the Evaluation of Visco-Elastic Behaviour of Asphalt Pavements

Murilo Freitas Frazao

Obtaining homogeneous back-calculated elasticity modulus from deflection measurements

Ashish Walia

Rationalizing Back-Calculation for Thick Bituminous Pavements: A Layer-Merging and Fixed-Moduli Approach

Martin Hauptman

Evaluation of real traffic loading with the use of portable bridge WIM system and laser traffic counters

Zsolt Boros

Change in state of defects on airport pavements after introduction of category E aircraft operations

Dalibor Udovič

Expansion Of Landing Areas at The Dubrovnik Airport, Croatia



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12.1

Poster Session

23. 6. 2026 | 16:10–17:10
Foyer II

Tomohito Hori

Development of a bearing-capacity testing apparatus using the self-weight of construction machinery

Tim Alte-Teigeler

Improving bearing capacities of pavements by stabilising concrete slabs with silicate resins

Fanyu Xia

Numerical and experimental optimization of pre-burial design for navigation lighting cables in airport asphalt pavement retrofitting

Ashish Walia

Evaluating Structural Reserves Under the ACR-PCR Framework: An Integrated NDT and Forensic Case Study

Atish Nadkarni *

Evaluation of MEPDG Damaged Moduli Approach Using Viscoelastic Back-Calculated Damaged Moduli

Mohamed Belmokhtar

Overview of thermal data collected during accelerated pavement testing



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12.1

Poster Session

23. 6. 2026 | 16:10–17:10

Magnus Holmsteen Jorgensen

Improving Pavement Structural Assessment with AI-Driven GPR Layer Detection

Tanvir Ahmed

Neural network based early warning system for JPCP transverse cracking



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13.1

In situ evaluation and performance prediction for pavements

23. 6. 2026 | 17:10–18:40
Linhart Hall

Moderator:
Dr Eyal Levenberg

Marko Čičković

Application of TSDD measurements on airfield pavements

Jean-Pascal Bilodeau

Study of asphalt concrete strain distribution in airfield pavements at the national airport pavement test facility

Wade Lein

Rapid airfield evaluations using dynamic cone penetrometers (DCP) for troop construction in remote locations

Angeliki Armeni

PCI estimation based on roughness measurements for airfield pavements

Ruggero Pinto

Rapid monitoring of airport rigid pavement



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13.2

Recycled materials and technologies

23. 6. 2026 | 17:10–18:40
Kosovel Hall

Moderator:

Professor Claudio
Lantieri

Maria Tsakoumaki

Treating reclaimed asphalt pavement as an unbound base material

Laszlo Petho

Development and performance of emulsion-stabilized secondary recycled asphalt pavement

Martynas Karbočius

Long-term performance of pavement structures with cold central-plant recycled base course

Lillian Mathisen

Results and experiences from an in-situ project on circular asphalt in Norway

Andre Paixao

Laboratory characterisation and mechanical performance of EAF slag and recycled rubber mixtures for transport infrastructure



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13.3

Geotechnical considerations

23. 6. 2026 | 17:10–18:40
M1 Hall

Moderator:

Professor Vojkan
Jovičić

Derek Houtz

Portable microwave radiometer for assessing moisture content in construction of road subgrade and aggregate layers

Yaser Ghafoori

Biopolymer-based stabilization of dredged sediment: Rheological analysis

Pavel Žvanut

Lessons learnt from the monitoring of high embankments founded on soft soils

Mike Winter

Geotechnical Asset Data to Enhance Road Network Resilience

Leonhardt Volker

Risk Assessment Rockfall Events

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Poster presentation: Zhenghan Hu

Parametric analysis and evolution characteristics of horizontal soil arching in single-row piles under lateral loading



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13.4

Evaluation of deflection measurement

23. 6. 2026 | 17:10–18:40
Štih Hall

Moderator:

Professor Helge Mork

Mehdi Kalantari

Temperature normalization of traffic speed deflectometer measurements

David Malmgren-Hansen

Machine learning based road segmentation for traffic speed deflectometer data evaluation

Klavs Olsen

Improved assessment of pavement deterioration using iPAVe

Herman Visser

Moisture matters: Understanding the influence of moisture content on structural behaviour

Dirk Jansen

FWD Comparison - an update and basis for discussions

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Poster presentations: Mansour Solaimanian

Impact of Moisture Content on Light Weight Deflectometer (LWD) Response for Quality Control of Compacted Subgrade & Base Material

Jerome Daleiden

Incorporation of Structural Response in Pavement Management



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INVITED LECTURES

24. 6. 2026
Linhart Hall

Wednesday, 24 June 2026



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INVITED LECTURES

24. 6. 2026
Linhart Hall

15.1 KEYNOTE LECTURE

09:00–10:00

Prof. William Powrie

The design of railway track formations: A soil mechanics perspective

Moderator: Prof. António Gomes Correia

18.1 KEYNOTE LECTURE

15:05–16:05

Dr Aleš Žnidarič

Road infrastructure challenges posed by heavy-duty vehicle loads

Moderator: Dr Pierre Hornych



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16.1
**In situ evaluation
and performance
prediction for
railtrack**

24. 6. 2026 | 10:05–11:35
Linhart Hall

Moderator:
Professor Jean-Pascal
Bilodeau

Leiv Jørgen Tofte Husøy

Subjectivity in ballast condition assessments: A study of visual inspection practices in Norway

Erol Tutumluer

Interpretation of falling weight deflectometer deflection basin in ballasted railway track using finite element modeling

Erol Tutumluer

Development of bender element field sensors for monitoring ballasted track condition

Andreas Kværnstuen

Image analysis as an alternative to ballast grain size investigation

Juliette Blanc

Monitoring of railway structures with bituminous and granular sublayers: assessment after eight years of use

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Poster presentation: Luca Bianchini Ciampoli

Enhancing Railway Ballast Monitoring with GPR Attribute Analysis



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16.2

Recycled materials and technologies

24. 6. 2026 | 10:05–11:35
Kosovel Hall

Moderator:
Dr Mike Winter

Ephrem Taddesse

Influence of RAP content on the viscoelastic properties of asphalt mixtures

Luca Tefa

Laboratory, field and environmental characterisation of construction and demolition waste stabilised with pozzolanic cement

Lemma Abuye Boja

Recycled soil stabilized with paper sludge ash as a sustainable roadbed material:
Mechanical performance and durability evaluation

Ehsan Yaghoubi

Green Mixtures for Backfilling Trenches beneath Trafficable Areas: Bridging
Laboratory Innovation and Real-World Application

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Poster presentation: Jiahui Zhou

Investigating fracture cracking and healing mechanisms of cement-treated recycled aggregate materials via Peridynamics



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16.3

Geosynthetics and reinforcement

24. 6. 2026 | 10:05–11:35
M1 Hall

Moderator:

Professor José Neves

Stanislav Lenart

Filtration performance of nonwoven geotextiles in transport infrastructure: Clogging behavior in internally unstable soils

Yike Yin

Mycelium-reinforced granular materials

Papa Masseck Thiam

Reinforcement geosynthetics: A solution for climate change impacted resource roads

Stepan Bohus

Performance of glass fibre road reinforcement materials after installation and trafficking



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16.4 **Evaluation of** **deflection** **measurement**

24. 6. 2026 | 10:05–11:35
Štih Hall

Moderator:

Dr Jean-Michel
Simonin

Konstantinos Gkyrtis

Evaluating pavement rehabilitation of asphalt layers using falling weight deflectometer data: A case study

Panujan Naguleswaran

Evaluation of deflection measurements using Falling Weight Deflectometer and Traffic Speed Deflectometer on the autobahn in Germany

Omar Guazzaroni

Analysis of traffic speed deflectometer measurements on semi-rigid pavements: Deflections temperature correction

Eyal Levenberg

Backcalculation of deflections obtained near asphalt pavement edges

.....

Poster presentations: Jacek Sudyka

Prediction of asphalt layer temperature: RNN and XGBoost as the basis of a proposed hybrid model

Ali Foroutan Mirhosseini

Unraveling frost and thaw effects: Temperature normalization of FWD deflection basins for structural assessment of Norwegian pavements

Zsolt Boros

Knowledge from the Evaluation of Visco-Elastic Behaviour of Asphalt Pavements



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16.5
Intelligent
construction
technologies

24. 6. 2026 | 10:05–11:35
M3+M4 Hall

Moderator:

Antonio Gomes
Correia

Stephan Tilgner

Enhanced bearing capacity assessment of roads using machine learning for automated GPR interpretation

Leo Sotto

Automatic identification of slope anomalies in traffic speed deflectometer measurements via machine learning

Pauli Kolisoja

Novel system for automatic recognition of studded tires

Serdal Terzi

Predictive modeling of pavement final service life using machine learning techniques

Carl Lenngren

Assessing middle-layer asphalt concrete temperature using FWD big data and artificial intelligence

.....

Poster presentations: Mohamed Belmokhtar

Overview of thermal data collected during accelerated pavement testing

Magnus Holmsteen Jorgensen

Improving Pavement Structural Assessment with AI-Driven GPR Layer Detection.



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17.1
**In situ evaluation
and performance
prediction for
railtrack**

24. 6. 2026 | 12:05–13:35
Linhart Hall

Moderator:
Professor William
Powrie

Chengpeng Hong

Experimental study on settlement characteristics of full-scale railway subgrade under freeze–thaw cycles

Heikki Luomala

Track stiffness as an indicator for evaluating the need for track renovation

Jiahui Zhou

Random vibration analysis of three-dimensional high-speed train-ballasted track-subgrade coupling system based on PDEM

Yiling Chen

Macro & microscopic dynamic responses of coupled train-ballasted track-subgrade system via hybrid MBD-DEM-FDM method

.....

Poster presentation: Dominik Rudisch

Numerical investigations on the influence of radius and track gauge on wheel-rail contact in narrow curves



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17.2

Recycled materials and technologies

24. 6. 2026 | 12:05–13:35
Kosovel Hall

Moderator:

Professor Pauli
Kolisoja

Andrea Graziani

Effect of temperature and curing time on the structural capacity of cold-recycled pavements

Andrea Scarponi

Evaluation of reclaimed asphalt demanufacturing (RAD) methods for high quality aggregate recovery

Marco Bruno

A real case application of a graphene-enhanced polymeric compound using RAP and steel slag sand in sustainable pavements

Stanislav Lenart

Rubber-modified ballasted track systems for noise and vibration mitigation

.....

Poster presentation: Jhunarani Ojha

Effect of Cyclic Wet-Dry Conditions on the Strength Behavior of Cement Stabilized Full-Depth Reclaimed (FDR) Road Materials



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17.3 **Subgrade soils**

24. 6. 2026 | 12:05–13:35
M1 Hall

Moderator:

Professor YuJun Cui

Sanja Jocković

CBR performance of fly ash, slag and soil mixtures for sustainable transportation infrastructure

José Everton

Suction-enhanced methods for characterising subgrade mechanical behaviour

Tatsuya Ishikawa

Evaluating the resilient behavior of crushable marginal subgrade soil

Samuel Valencia-Díaz

Subgrade optimisation for transport infrastructure: a mechanistic-economic framework

Samuel Valencia-Díaz

Integrating soil compaction and bearing capacity characterization through a new laboratory-based approach

.....

Poster presentation: Yao Shan

Energy dissipation of ISO standard dry sand under high-frequency intermittent train loading: Experimental insights from modified triaxial shearing apparatus



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17.4 **Evaluation of** **deflection** **measurement**

24. 6. 2026 | 12:05–13:35
Štih Hall

Moderator:

Dr Gerardo Flintsch

Eyal Levenberg

A Python code for calculating deflections in a layered elastic half-space

Sidi Sidahmed

Temperature and noise effects in estimating subgrade modulus from traffic-speed deflectometer data using machine-learning methods

John Yeaman

The use of deflection data in preparing Australian airports for modern times

Alejandra M. Vega

Evaluation of airfield asphalt pavements under heavy aircraft loads based on deflection basin parameters

Konstantinos Gkyrtis

Optimization of assessment procedures for concrete pavements at highway toll stations

.....

Poster presentations: Murilo Freitas Frazao

Obtaining homogeneous back-calculated elasticity modulus from deflection measurements

Ashish Walia

Rationalizing Back-Calculation for Thick Bituminous Pavements: A Layer-Merging and Fixed-Moduli Approach



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17.5

Use of big data and AI

24. 6. 2026 | 12:05–13:35
M3+M4 Hall

Moderator:

Professor Halil Ceylan

Asmus Skar Christiansen

Strain measurements of airport concrete pavement utilizing distributed fiber-optic sensors

Mason Smetana

Domain adaptation of modern large language models in pavement engineering through advanced information retrieval

Imad Al Quadi

Development of Markov Decision Process for GPR-Optimized Asphalt Concrete Rolling Pattern

Klemen Klemar

Detection of Traffic Anomalies Using Distributed Fiber Optic Sensing in Work Zone Environments

.....

Poster presentations: Tanvir Ahmed

Neural network based early warning system for JPCP transverse cracking



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19.3 **Unbound granular materials**

24. 6. 2026 | 16:10–17:40
M1 Hall

Moderator:

Professor Sigurdur
Erlingsson

Erol Tutumluer

Improved prediction of resilient modulus of unbound aggregates using artificial neural networks

Shafiqur Rahman

Traffic load limitations of pavements based on shakedown behavior of the unbound layers

Jean-Pascal Bilodeau

Estimating permanent deformation in granular materials under cyclic loads using granulometric parameters

Yang Yun

The long-term field experiment of geogrid-stabilization in ballasted trackbed

Jose Estaire

Settlement laws of bed layers of a ballast track as determined in CEDEX Track Box

.....

Poster presentations: Yuanjie Xiao

Quantitative Prediction of Ballast Particle Abrasion Based on Surrogate Modeling and Machine Learning

M. Kaan Etikan

Discrete Element Analysis of the Response of Unbound Granular Materials Consisting Marginal Road Materials under Triaxial Loading

Ignacio Artamendi

Laboratory assessment of mechanical degradation and service life of railway ballast



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19.4 **Measurement of** **traffic loading**

24. 6. 2026 | 16:10–17:40
Štih Hall

Moderator:
Aleš Žnidarič

Doron Hekič

Extension of the bridge weigh-in-motion system from traffic loading measurement tool towards structural health monitoring

Martin Larsson

The effect of heavy loading and groundwater table in full-scale testing of cycle paths

Taavi Tõnts

Influence of Reduced Lateral Wandering by Connected and Automated Vehicles on Rutting and Fatigue of Elastic Pavements

Aditya Singh

Seasonal Load Spectra on Illinois Interstate Highways

.....

Poster presentations: Martin Hauptman

Evaluation of real traffic loading with the use of portable bridge WIM system and laser traffic counters



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19.5

Deflection at Road Traffic Speed

24. 6. 2026 | 16:10–17:40
M3+M4 Hall

Moderator:
Dr Marko Čičković

Herman Visser

A machine learning-based pavement structural capacity estimation method using data collected by traffic speed deflectometer (TSD)

Eyal Levenberg

Elastostatic analysis of measured deflection slopes

André Felipe Vale

The use of a traffic speed deflectometer device (TSDd) for evaluating load transfer efficiency (LTE) - a case study

André Felipe Vale

Repeatability and reproducibility analysis of FWD and TSDd



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INVITED LECTURES

21. 6. 2026
Linhart Hall

Workshops, 21 June 2026



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WS1:
**Experimentation
and modelling for
transportation
infrastructure
facing climate
extremes**

21. 6. 2026 | 14:00–18:30
M1 Hall

Moderator:
Prof. Yu-Jun Cui

14:00–14:10

Tatsuya Ishikawa (Hokkaido University)

Welcome speech

14:10–14:40

Yu-Jun Cui (École des Ponts ParisTech)

Soil-atmosphere interaction in embankments: field monitoring and numerical modelling

14:40–15:10

Joel Smethurst (University of Southampton)

The impact of climate change on the performance of clay earthworks in the UK

15:10–15:40

Mike Winter (Winter Associates Limited)

Climate change rainfall and debris flow – past and present

16:00–16:30

Tatsuya Ishikawa (Hokkaido University)

Pavement life prediction under cold and changing climate based on thermo-hydro-mechanical characterisation of geomaterials



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WS1:
**Experimentation
and modelling for
transportation
infrastructure
facing climate
extremes**

21. 6. 2026 | 14:00–18:30

Moderator:

Prof. Yu-Jun Cui

16:30–17:00

Ana Heitor (University of Leeds)

Role of climate driven deterioration in compacted soils

17:00–17:30

Han-Lin Wang (Hunan University)

Climate-related active and passive soil arching in unsaturated compacted clay

17:30–18:20

António Gomes Correia (Universidade do Minho, Portugal)

Round-table discussion

18:20–18:30

Yu-Jun Cui (École des Ponts ParisTech)

Ending speech



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WS2:
Geosynthetics in
Pavement
Engineering:
Reinforcement and
Stabilisation for
Roads, Railways,
and Airfields

21. 6. 2026 | 09:00–12:30
M1 Hall

Moderator:

Dr. Stanislav Lenart,
(ZAG), Slovenia

09:00–09:30

Dr. Stanislav Lenart, (ZAG), Slovenia

Welcome speech

09:30–10:00

Prof. Erol Tutumluer, University of Illinois Urbana-Champaign, USA

Applications of Geosynthetics in Road & Airfield Pavements and Railway Track

10:00–10:30

Dr. David Brill, Federal Aviation Administration, USA

Full-Scale Test of Flexible Airport Pavement with Geosynthetic Inclusions

10:30–11:00

Prof. Leoš Horníček, Czech Technical University in Prague, Czech Republic

Improvement of Railway Track Stability Using Geosynthetics Placed Beneath Track
Bed



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WS2:
Geosynthetics in
Pavement
Engineering:
Reinforcement and
Stabilisation for
Roads, Railways,
and Airfields

21. 6. 2026 | 09:00–12:30

Moderator:

Dr. Stanislav Lenart,
(ZAG), Slovenia

11:00–11:20

Group photo & Coffee break

Dr. Stanislav Lenart, (ZAG), Slovenia

**Innovative Applications of Geosynthetics for Enhanced Ballast
Confinement in Railway Tracks**

Prof. Gali Madhavi Latha, Indian Institute of Science, Bengaluru, India

Novel geogrids for better performance and cost benefits

Jörg Klomp maker, NAUE GmbH & Co. KG, Germany

**Performance test on geogrid stabilised granular base course material –
reduction of accumulated plastic deformations**

Dr. Ivan P. Damians, Universitat Politècnica de Catalunya, Spain

**Geosynthetic Reinforcement in the Second-Generation Eurocodes: Design
Updates, Applications and Sustainability Considerations**

Prof. Erol Tutumluer, University of Illinois Urbana-Champaign, USA

Ending speech



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WS3:
Rockfall – From
Risk to Resilience
for Roads and
Railways

21. 6. 2026 | 14:00–17:30
Alma Karlin Hall

Moderator:
Vjekoslav Budimir,
Geobrugg AG, Croatia

14:00–14:45

Volker Leonhardt, Geobrugg AG

Protection in the Public Eye: Perception, Impact, Reality

14:45–15:15

Vjekoslav Budimir, Geobrugg AG

Risk assessments rockfall events

15:15–15:45

Volker Leonhardt, Geobrugg AG

Testing What Truly Matters: Load Cases Beyond the Standards

16:15–16:45

Tomaž Cej, Rejda

Function and Comparison: GBE, RXE, and ROCCO

11:45–17:15

Tomaž Cej, Rejda

Geobrugg GUARD: Remote Status Monitoring



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WS4:
Traffic Speed
Deflectometer
Device (TSDD)
Quality Control

21. 6. 2026 | 09:00–12:30
M3+M4 Hall

Moderator:

Dirk Jansen, BAST,
Germany

Dirk Jansen, BAST

Welcome & live polling Keynote: TSDD worldwide – from research to guidelines

David Malmgren-Hansen, Greenwood Engineering / Herman Visser, ARRB
Systems / Susanne Baltzer, DRD

Quality assurance through advances in technology Quality assurance through
comparison

Jerome Daleiden, ARRB Systems / Gerardo Flintsch, Virginia Tech /
Susanne Baltzer, DRD / Dirk Jansen, BAST

Case studies Moderated discussion

Susanne Baltzer, DRD / Dirk Jansen, BAST

Wrap-up & Take-aways



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INVITED LECTURES

25. 6. 2026
Linhart Hall

Technical Site Visit **Thursday, 25 June 2026**

Second Track Divača–Koper Project