7th Symposium on Pavement Surface Characteristics
SURF 2012
Smooth, Safe, Quiet and Sustainable Travel through Innovative Technologies

Symposium Program Ahead

September 18-21, 2012
Norfolk Waterside Marriott
7th Symposium on Pavement Surface Characteristics
SURF 2012

International Scientific Committee
Brian Ferne, representing PIARC TC D2a, TRL, UK (Chair)
Johannes Steigenberger, representing PIARC TC D2c, VOEZFI, Austria
Andras Gulyas, representing PIARC TC D2b, KOZUT, Hungary
Mark Swanlund, representing FHWA, FHWA, USA
Gerardo Flintsch, representing Virginia Tech, VTTI, USA
Georges Dimitri, representing ERTOS, Michelin, France
Kevin McGhee, representing TRB, VCTIR, USA
Frank Holt, representing Equipment Manufacturers, Dynatest, USA
Audrey Copeland, representing Asphalt Construction Industry, NAPA, USA
Larry Scofield, representing Concrete Construction Industry, ACPA, USA
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Bojan Leben, representing SURF2008, ZAG, Slovenia
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Brian Ferne
Andras Gulyas
Mark Swanlund
Gerardo Flintsch
Kevin McGhee
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Bojan Leben
Maureen Jensen
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Manfred Haider

This event is organized by the
World Road Association
in partnership with the
American Association of State Highway and Transportation Officials (AASHTO)
Transportation Research Board (TRB)
Federal Highway Administration (FHWA)
Virginia Center for Transportation Innovation and Research (VCTIR)
Center for Sustainable Transportation Infrastructure (CSTI)
of the Virginia Tech Transportation Institute (VTTI)
and
Virginia Tech's Continuing and Professional Education (VT CPE)
# Schedule

## Tuesday, September 18, 2012

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<td>3:30 – 7:00 pm</td>
<td>Registration – Norfolk Ballroom Prefunction Area</td>
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<tr>
<td>5:00 – 7:00 pm</td>
<td>Welcome Reception (Sponsored by Dynatest) – Norfolk Ballroom IV</td>
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<td>Exhibit Hall open – Norfolk Ballroom V, VI</td>
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## Wednesday, September 19, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>7:00 am – 12:00 pm</td>
<td>Registration – Norfolk Ballroom Prefunction Area</td>
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<tr>
<td>7:30 – 8:30 am</td>
<td>Continental Breakfast – Norfolk Ballroom IV</td>
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<tr>
<td>8:00 am – 5:00 pm</td>
<td>Exhibit Hall open – Norfolk Ballroom V, VI</td>
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<tr>
<td>8:30 – 10:30 am</td>
<td><strong>GENERAL SESSION</strong> – Norfolk Ballroom I, II, III</td>
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|               | ▶ **A1: Panel on Highway, Vehicle and Tire Requirements for Pavement Surface Characteristics**  
|               | Moderator: Gerardo Flintsch                                           |
|               | Welcome on Behalf of the World Road Association, Jeffrey F Paniati, U.S. First Delegate  
|               | Highway Manager Requirements for Pavement Surface Characteristics, Mark Swanlund  
|               | Tire Requirements for Pavement Surface Characteristics, Ernst-Ullrich Saemann  
|               | Vehicle Requirements for Pavement Surface Characteristics, Mike Rizzo |
| 10:30 – 11:00 am | Break – Norfolk Ballroom IV                                           |
| 11:00 am – 12:30 pm | **GENERAL SESSION** – Norfolk Ballroom I, II, III                      |
|               | ▶ **A2: The Sustainability (Rolling Resistance) of Pavement Surfaces**  
|               | Moderator: Kevin McGhee                                               |
|               | MIRIAM: An International Round Robin Test to Compare Rolling Resistance Measurement Methods, Aneleen Bergiers and Luc Goubert  
|               | About the Rolling Resistance Trailer and Parameters Influencing Rolling Resistance, Aneleen Bergiers, Luc Goubert and Cedric Vuye  
|               | FHWA Infrastructure Health Assessment, Nastaran Saadatmand and Thomas Van  
|               | A Mechanistic Approach for Pavement Vehicle Interaction in LCA, Mehdi Akbarian |
| 12:30 – 1:30 pm | Lunch – Norfolk Ballroom IV                                           |
| 1:30 – 3:00 pm | **CONCURRENT SESSIONS**                                              |
|               | ▶ **B1: Measurement of Pavement Friction**                           
|               | Moderator: Frank Holt – Norfolk Ballroom I, II                        |
|               | Why Fixed Slip Devices Can Not Measure the Speed Gradient Due to the Pavement, James Wambold and Zoltan Rado  
|               | The 2008 Ohio Friction Study, Kelly Smith and Roger Larson  
|               | Assessment of the Skid Resistance of Natural Sands Used in Portland Cement Concrete Pavements in Ontario, Madhura Rajapakshe, John Metz and Manjriker Gunaratne  
|               | The Effect of Binder Coatings on the Development of Early Life Asphalt Surfacing Properties, David Woodward, Shaun Friel and Phillip Miller  
C1: Measurement of Pavement Evenness
Moderator: Robert Orthmeyer – Norfolk Ballroom III

A Mobile Profilometer for Road Surface Monitoring by Use of Accelerometers, Kazuya Tomiyama, Akira Kawamura, Nakajima Shigenori, Ishida Tateki, and Jomoto Masakazu
An Innovative Routine Methodology For Road Surface Control, Keizo Kamiya, Akira Kawamura, Winfried Glattki, and Andreas Ueckermann
Further investigations on the Weighted Longitudinal Profile, Roland Spielerhofer and Andreas Ueckermann
Evaluation of Longitudinal Evenness of a Newly Constructed Road Section: a Detailed Study of Different Evenness Measurements, Carl Van Geem and Bart Beaumesnil
Information Relating to the Measurement of the Longitudinal Evenness in France, Fabien Menant and Jean-Marc Martin

3:00 – 3:30 pm Break – Norfolk Ballroom IV

3:30 – 5:00 pm CONCURRENT SESSIONS

B2: Use of Friction Measurements
Moderator: Helen Viner – Norfolk Ballroom I, II

Early Life and In Service Friction Characteristics of Runway Surface Courses, Iswandaru Widyatmoko and Carl Fergusson
Selection of the Most Cost Effective Pavement Maintenance Treatment for Selected Airport Pavements in New Mexico, Md Rahman and Rafiqui Tarefder
Experimental Validation of a Physically Meaningful Method for Pavement Friction Measurement Device Harmonization, Madhura Rajapakshe, John Metz and Manjriker Gunaratne
The Influence of Tire Temperature on Skid Resistance Measurements, Santosh Kumar Srirangam, Tom Scarpas and Cor Kasbergen

C2: Evaluating Materials and Surface Characteristics
Moderator: Larry Scofield – Norfolk Ballroom III

The Colas Group’s Experience of the ISO Test Track, Xavier Carbonneau, Jean-Luc Gautier and Vincent Lapeyronie
HMA Friction Course: Volumetric Properties vs. Surface Texture, Teresa Iuele, Filippo Practico, Rosolino Vaiana and Vincenzo Gallelli
Performance of High Friction Surfacing Demonstrations in the U.S., David Merritt, Robert Rasmussen and Michael Moravec
Pavement Experts’ Knowledge Converted into an Automatic Assessment Tool, Jean-Luc Gautier, Petr Dokladal and Eric Coquelle
Friction Testing Program in Virginia, Affan Habib

Thursday, September 20, 2012

7:30 – 8:30 am Continental Breakfast – Norfolk Ballroom IV
8:00 am – 9:00 pm Exhibit Hall open – Norfolk Ballroom V, VI
8:30 –10:00 am CONCURRENT SESSIONS

B3: The Effect of Polishing on Friction
Moderator: Margo Briessinck – Norfolk Ballroom I & II

Comparing Simulative Polishing in the Laboratory with Polishing Caused by Traffic, Alan Dunford, Helen Viner, Peter Roe and Louise Caudwell
Characterizing Pavement Surface Macrotexture Using Fractals, Amin El Gendy and Ahmed Shalaby
Assessment of the Skid Resistance of Natural Sands Used in Portland Cement Concrete Pavements in Ontario, Stephen Senior and Bob Gorman
Modification of the Polished Mortar Value Test Method to Evaluate the Frictional Properties of Natural Sands Used in Portland Cement Concrete Pavements in Ontario, Carolina Cautillo, Carole Anne MacDonald and Stephen Senior
Laboratory Exploration of the Effect on Skid Resistance of Blending Aggregates and Aggregate Size, Alan Dunford, Helen Viner, Peter Roe, Ian Carswell and Louise Caudwell
**C3: Measurement of Pavement Texture and Shape**
Moderator: Leif Sjogren – Norfolk Ballroom III

3D Pavement Surface Macrotexuture: Measurements and Friction Relationships, Amin El Gendy and Ahmed Shalaby
About the Reproducibility of Road Texture Profiles in the Macro-Mega Range and the Problem of Spikes, Luc Goubert
Fusion of High-Resolution Laser Profile and Lidar Measurements for Enhanced Condition Assessment, Dean Wright, Nathan Dhillon, Kamal Nesnas, Alex Wright and Colin Christie
3D Pavement Surface Wear Analysis Device, Nick Trevorrow
Improved Methods for Characterizing Pavement Surface Texture, Timothy Miller

10:00 – 10:30 am  Break – Norfolk Ballroom IV

**B4: The Effect of Water on Surface Properties**
Moderator: Larry Wiser – Norfolk Ballroom I, II

On-Board Estimation of Water Depth Using Low-Cost Sensors, Delphine Prevost
Development of a Prediction Model for Splash and Spray, Helen Viner, David Hargreaves, Alan Dunford, Kamal Nesnas, Tony Parry and Gerardo Flintsch
Influence of Thin Water Film on Skid Resistance, Yannick Beautru, Veronique Cerezo, Minh-Tan Do and Malal Kane
Exposure Model For Predicting Splash and Spray, Lijie Tang, Gerardo Flintsch and Helen Viner

**C4: Measurement of Pavement Texture and Shape** (continued)
Moderator: Phillipe Lepert – Norfolk Ballroom III

New Methods for Network Level Automated Assessment of Surface Condition in the UK, Alex Wright, Emma Benbow and Colin Christie
Determination of Pavement Surface Cracks from Video-Images Using an Image Scale-Space Approach, Costas Armenakis and Li Ningyuan
30 KHz 3D Imaging Sensor for Pavement Surface Survey, Kelvin Wang
RoadCrack — Measuring More Than Cracks, Richard Wix, David Pratt and Roland Leschiski

12:00 – 1:30 pm  Lunch – Norfolk Ballroom IV

**B5: Modeling the Tire/Surface Interaction**
Moderator: Katherine Petros – Norfolk Ballroom I, II

Lateral and Longitudinal Grip Variation, David Woodward and Phillip Millar
Variation of the Observed Surface Strains Caused by Uniform and Non-Uniform Contact Pressures Using a Finite Element Method, Dermot Casey
Adherence Prediction Models Developed in Argentine, Marta Pagola and Oscar Giovanon
Development of Asset Management in Safety Road Analysis based in Vulnerability Profiling Combining GRIP Measurements, Retroreflective of Pavement Marking and Roadway Factors, Jairo Sanabria, Luis Guillermo Loria, Roy Barrantes, and Jose Francisco Garro
Effects of Tire Axle Load and Inflation Pressure on Near-Surface Pavement Response, Guangming Wang, Reynaldo Roque and Dennis Morian

**C5: Measurement of Noise**
Moderator: Luc Goubert – Norfolk Ballroom III

Measurement of Sound Absorption Coefficient of Road Surfaces in Situ, Robert Alvarez de Sotomayor, Sixto Yanguas, Jaun Gonzalez and Laura Parra
Observations on Using Microtomography to Study Noise-Reducing Asphalt Mixes, Xavier Carbonneau, Jerome Adrien, Vincent Lapeyronie
CPX Noise Measurements in Different Road Surfaces, Laura Parra, Tomas Casas, Roberto Alvarez de Sotomayor, Rubio Baltasar, and Francisco Sinis
Virginia Quiet Pavement Study, Kevin McGhee
3:00 – 3:30 pm Break – Norfolk Ballroom IV

3:30 – 5:00 pm CONCURRENT SESSIONS

- **B6: Assessing Pavement Surface Performance**
  Moderator: Benoit Petitclerc – Norfolk Ballroom I, II
  
  - Development of Pavement Condition and Health Scores for the Interstate Highway System, Jonathan Groeger, Amy Simpson, Gonzalo Rada, and Josephn Guerre
  - Road Maintenance Policy Based on an Expert Asset Management System — Concept and Case Study, Philippe Lepert
  - Determination of Correlation Between Road Pavement Skid Resistance and Braking Deceleration, Darko Kokot, Robert Rijavec and Miha Ambroz
  - Current State of the Pavement Warranty in North America, Amin El Gendy, Yan Qi and Feng Wang
  - IRI and GRIP of the National Road Network of Costa Rica, and Relationships with Road Surface Deterioration, Jose Francisco Garro, Jairo Sanabria, Roy Barrantes and Guillermo Loria

- **C6: Using Surface Characteristics for Assessing Performance**
  Moderator: Carl van Geem – Norfolk Ballroom III
  
  - A Methodology to Evaluate Pavement Noise Performances for Characterization, Checking and Monitoring Purposes, Fabienne Anfosso, Cedric Leroux
  - Using Tire/Pavement Interface Noise Results to Define Statistically Similar Bituminous Pavements in Massachusetts, John Hencken, Edwin Haas and Thomas Bennet
  - Performance of Next Generation Concrete Surface Field Installations, Larry Scofield
  - Microsurfacing as a Maintenance Technique: Recent Implications on Motorways, Jean-Etienne Urbain and Eric Layerle
  - Road Smoothness Measurements Using Prove Vehicle Acceleration Data, Samer Katicha, Gerardo Flintsch and Steve Valeri

6:00 – 8:30 pm Conference Dinner – Norfolk Ballroom IV

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**Friday, September 21, 2012**

7:30 – 8:30 am Continental Breakfast – Norfolk Ballroom IV

8:00 – 11:00 am Exhibit Hall open – Norfolk Ballroom V, VI

8:30 – 10:00 am GENERAL SESSION – Norfolk Ballroom I, II, III

- **A3: Using Friction Measures to Reduce Accidents**
  Moderator: Mats Wendel
  
  - Use and Limitations of Crash Data in Determining the Priority for Treating Sites with Low Skid Resistance, Helen Viner, Stuart Brittain, Fiona Coyle and Louise Caudwell
  - Management of Network Level Skid Resistance in Australia — A National, State or Local Task?, Paul Hillier
  - Improving Highway Safety through Pavement Friction Management Programs, Kelly Smith, Gerardo Flintsch and Roger Larson
  - Relation Between Crash Rate and Pavement Type on Curves, Roya Amjadi, James Sherwood and Yusuf Mohamedshah
  - Traffic Safety Gains with Attention to Subjective Aspects of Surface Characteristics, Jacob Groenedijk, Arco Blanken, Erik Vos and Frank Bouman

10:00 – 10:30 am Break – Norfolk Ballroom IV

10:30 am – 12:00 pm GENERAL SESSION – Norfolk Ballroom I, II, III

- **A4: Closing Panel: How Do We Meet the User Requirements?**
  Moderator: Brian Ferne
  
  - Closing Words – Gerardo Flintsch

12:00 pm Boxed Lunches Available – Norfolk Ballroom IV
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