

International Society

ISCP

for Concrete Pavements

INTERNATIONAL SOCIETY FOR CONCRETE PAVEMENTS

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ISCP NEWS

JULY 8-12 10th International Conference on Concrete Pavements Québec, Canada



www.quebeccityhotelsonline.com/fairmont-le-chateau-frontenac



ISCP Letter from the President

ISCP's 10th International Conference on Concrete Pavements will kick off on July 8 in Québec City, Québec Canada – only 10 days from now! The conference steering committee, led by Tim Smith, the Conference Chair, has done a tremendous job of putting together an event and it going to be the best yet in a series of conferences that goes back 35 years. More than 300 participants are expected from around the world, and most will be actively participating as speakers in one of 12 technical sessions and 12 workshops, or as representatives of more than 20 exhibitors. We also have 16 students participating in the poster board competition, and this year's event marks a return of the post-conference field trips and site visits.

ISCP thanks the many sponsors and collaborators (listed below) without whom the organization and financing of the 10th ICCP would have been impossible!

Sponsorships are offered at four (4) levels: Platinum, Gold, Silver and Bronze. For Sponsorship details, please go to: <http://www.concretepavements.org/10thiccp/sponsors.htm>
To become a Sponsor, please contact: Sherry Sullivan, Sponsorship Coordinator
Phone: (416) 449-3708 ext. 234 | E-mail: conference.sponsorships@concretepavements.org
It's not too late to join us – please register online at www.concretepavements.org/10thiccp/ by June 30 to save \$100 over on-site registration costs. You can access hotel reservation links for seriously discounted rates (\$219/night; \$159/night for government employees) at the historic Fairmont Le Château Frontenac (the conference hotel) only at this site.

I hope to see you at this year's conference – the next one is four years away!

Sincerely,

Mark Snyder, *ISCP President*

A **NEW**, full **Preliminary Program** is now available online at: <http://www.concretepavements.org/10thiccp/program.htm>

ISCP 10th ICCP Sponsors

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Manitoba Infrastructure and Transportation
Precast/Prestressed Concrete Institute (PCI)
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EUPAVE
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Office du tourisme de Québec
National Concrete Pavement Technology Center at Iowa State University
Transportation Association of Canada
Transportation Research Board (TRB)

CONFERENCE HOST:

Transports Québec



ORGANIZATIONAL MEMBERS & MAJOR EVENT SPONSORS:



Civil Engineers Find Savings Where the Rubber Meets the Road

MITnews

Study shows that pavement deflection under vehicle tires makes for a continuous uphill drive that increases fuel consumption.

A new study by civil engineers at Massachusetts Institute of Technology (MIT), released in a recent peer-reviewed report, shows that using stiffer pavements on the nation's roads could reduce vehicle fuel consumption by as much as 3% — a savings that could add up to 273 million barrels of crude oil per year, or \$15.6 billion at today's oil prices. This would result in an accompanying annual decrease in CO₂ emissions of 46.5 million metric tons. This research was conducted as part of the Concrete Sustainability Hub at MIT and the study's authors are Professor Franz-Josef Ulm, *Civil and Environmental Engineering* and PhD student Mehdi Akbarian.

The study is the first to use mathematical modeling rather than roadway experiments to look at the effect of pavement deflection on vehicle fuel consumption across the entire U.S. road network. The paper on this work has also been accepted for publication later this year in the *Transportation Research Record*.



By modeling the physical forces at work when a rubber tire rolls over pavement, the study's authors conclude that because of the way energy is dissipated, similar to that of beach sand underfoot, the maximum deflection of the load is behind the path of travel. This has the effect of making the tires on the vehicle drive continuously up a slight slope, which increases fuel use. Stiffer pavements would decrease deflection and reduce

that footprint. "This work is literally where the rubber meets the road," says Ulm. "We've got to find ways to improve the environmental footprint of our roadway infrastructure. The ultimate goal is to make our nation's infrastructure more sustainable."

The new study analyzes the structural (thickness) and material (stiffness and type of subgrade) properties of pavements, therefore the mathematical model is based on the actual mechanical behavior of pavements under load. Ulm and Akbarian fed their model data on 5,643 representative sections of the nation's roadways taken from U.S. Federal Highway Administration data sets and include information on the:

- surface and subsurface materials of pavements and the soils beneath
- number, type and weight of vehicles using the roads
- calculated and incorporated contact area of vehicle tires with the pavement.

Up to 80% of that extra fuel consumption could be reduced through improvements in the basic properties of the materials used to build the roads.

Akbarian says, "Better pavement design over a lifetime would save much more money in fuel costs than the initial cost of improvements. This would decrease CO₂ emissions and save the state departments of transportation money through reduced maintenance costs." To read the entire article, please go to MIT News at:

<http://web.mit.edu/newsoffice/2012/pavement-savings-tires-0523.htm>

or go to: <http://web.mit.edu/press/2012/pavement-savings-tires.html>

When a rubber tire rolls over pavement... energy is dissipated similar to that of beach sand underfoot... stiffer pavements would decrease deflection

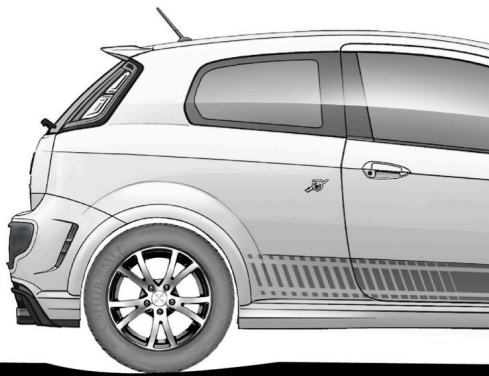
Austria Transportation Research Board Annual Meeting Paper Presented: "Improving Skid Resistance of Concrete Pavements in Tunnels"

The paper titled *Improving Skid Resistance of Concrete Pavements in Tunnels (Verbesserung der Griffigkeit von Betonfahrbahnen im Tunnel - in German)*, by Michael Steiner, was presented at the 2012 annual meeting of the Austrian Transportation Research Association (Forschungsgesellschaft Straße-Schiene-Verkehr) in Vienna, June 21, 2012.

In Austria, 346 km of road tunnels (two thirds with a concrete pavement) are in service and another 110 km are being built or planned. For more than 20 years, concrete pavements with an exposed aggregate surface have been used on motorways in Austria to provide low noise and high skid surfaces. However, in a number of tunnels, a significant drop of the skid number was observed without any difference in the texture or the visible appearance of the surface of the pavement (e.g. 0.8 in the open to 0.6 in the tunnel). The reason for this skid differentiation was investigated jointly by ASFAG (Austrian Motorways), VÖZ (Association of the Austrian Cement Manufacturers), and AC2T (Tribology Research). Cores were taken from different pavements, tested for skid resistance in the lab, then heated and the substances were identified by means of gas-chromatography and mass-spectrography.

The result: Wax, used in the curing compound, was found in the tunnel specimens but almost none in the outside specimens. This was due to the effects of sunlight and rain. The amounts of wax determined and the skid trailer measurements on the road (and the skid numbers determined on the core surfaces respectively) were well correlated.

The solution: Cleaning by sand blasting was used to bring the skid values in the tunnel up to the outside level - creating improved skid-resistance. The next step is the development of a less abrasive cleaning method using a suitable detergent. For more information on this paper and this subject, please contact Michael Steiner by e-mail at: michael.steiner@asfinag.at Summary



When the tires of a car or truck roll over a roadway, the maximum pavement deflection is just behind the path of travel. This has the effect of making the vehicle's tires roll continuously up a slight slope (exaggerated in this illustration), increasing the vehicle's fuel consumption. Image: Mehdi Akbarian



Photo: Fototothing Austria Tunnel:
<http://www.fototothing.com/7d8c/photo/1f06c819c25cba11852c241449f343b9/>

CONFERENCE REGISTRATION REMINDERS

International Conference on Long-Life Concrete Pavement (LLCP) 2012, in September



Registration continues for the International Conference on Long-Life Concrete Pavements, to be held in Seattle, Washington, September 18-21, 2012.

Registration dates are: **Late July 31, 2012**
Very Late after July 31, 2012

To register, please go to:

http://registeruo.niu.edu/iebms/wbe/wbe_p1_main.aspx?oc=40&cc=WBE4012096.

For the conference website, please go to:

<http://www.fhwa.dot.gov/pavement/concrete/2012conf.cfm>.

For more information, please contact: Shiraz Tayabji, *Fugro Consultants, Inc.*:

Phone: 410-302-0831 | E-mail: stayabji@aol.com

CALL FOR ABSTRACTS

ASCE Announces Call for Abstracts for the 2013 Airfield & Highway Pavement Conference



The Transportation and Development Institute (T&DI) of the American Society of Civil Engineers (ASCE) is pleased to announce Call for Abstracts for the 2013 Airfield and Highway Pavements Conference with the theme "Sustainable and Efficient Pavements" to be held June 9 - 12, 2013 at the Sheraton Los Angeles Downtown in Los Angeles, California, USA. **ABSTRACTS due July 15, 2012.**

Papers may be submitted on the following topics:

Airfield and Highway Pavement Construction and Rehabilitation Techniques
Flexible and Rigid Pavement Advanced Modeling and Design/Analysis Approaches
Asphalt and Binder Material Characterizations and Testing
New and Advanced Methods on Pavement Quality Control/Quality Assurance
Pavement Sustainability and Life Cycle Assessment Method
Pavement Monitoring and Nondestructive Testing and Evaluation
Pavement Interlayer Systems
Accelerated Testing and Instrumented Pavements
Unbound Material Testing, Modeling, and In-situ Characterizations
Pavement Management Systems
Case studies of interesting or unusual paving projects

Co-Chaired by Imad Al-Qadi, Ph.D., P.E. Dist. M. ASCE (University of Illinois at Urbana-Champaign) and Scott Murrell, P.E., M.ASCE (The Port Authority of NY & NJ), this conference will bring together researchers, designers, project/construction managers and contractors from around the world to discuss the ever-changing challenges to airfield and highway pavement sustainability, design, advanced modeling, performance, evaluation and monitoring, rehabilitation, life-cycle assessment, and emerging technologies. The conference is focused on state-of-the-art and state-of-the-practice in the areas of sustainable, durable, efficient and innovative pavements, as well as pavement technology transfer and implementation, allowing us to share the recent developments in this field that keep us all current with cutting-edge technological improvements.

Please join us as an attendee, presenter, exhibitor and sponsor or cooperating organization. We look forward to continue the tradition of another successful conference.

For detailed instructions on how upload a session proposal, a paper or a presentation abstract, as well as conference submission/review process deadlines, please visit the conference website at:
www.pavementconference.org

You may also contact Andrea Baker by phone at:
703-295-6124
or by e-mail:
abaker@asce.org.

CALL FOR ABSTRACTS & PAPERS DIGEST

June 30, 2012 Abstracts are requested for papers for the Fifth North American Conference on the Design and Use of Self-Consolidating Concrete 2013 (SCC2013), which will be held May 12-15, 2013 at the Westin Michigan Avenue in Chicago, Illinois, USA. Papers should address recent innovation, application and production of Self-Consolidating Concrete (SCC). All accepted papers will be published in the conference proceedings, and selected papers will be published in the *Journal of Cement and Concrete Composite*. For topics and abstract information, please go to: <http://www.intrans.iastate.edu/events/scc2013/abstract/call-for-abstracts/>. For conference information, please go to: <http://www.intrans.iastate.edu/events/scc2013/about/>.

August 1, 2012 The submission site for committee Calls for Papers for the 2013 TRB Annual Meeting is now open for your use at: <http://pressamp.trb.org/CallForPapers/callsforpapers.asp>. Please use the submission form and follow the instructions that are linked to it. Subject area categories' descriptors may be found at: <http://onlinepubs.trb.org/onlinepubs/am/calls/Subjects.pdf>

August 15, 2012 Abstracts are invited on the topics outlined and other subjects related to the theme of the 9th International Conference and Exhibition on Concrete for Sustainable Construction to be held February 11-13, 2013 at the Gulf International Convention Center, Gulf Hotel Kingdom of Bahrain.

All abstracts are due and should be forwarded through the Conference website at:

www.concrete9.org or e-mail info@concrete9.org, vivek@mohandis.org.



A prize of US \$10,000 will be given to the author(s) of the Best Technical Paper presented at the Conference.

December 31, 2012 Call for abstracts due for the 14th International Winter Road Congress to be held in Andorra-la-Vella (A country in the center of the Pyrenees directly between France and Spain), February 4-7, 2014. The theme is: *"Reconciling road safety and sustainable development in a context of climate change and economic constraints"*. For information, please go to: <http://www.aipcrandorra2014.org/?lang=en>.

UPCOMING EVENTS

**JULY
2012**



3rd Advanced Workshop on Concrete Pavements

July 5-7, 2012 Lac Delage, Quebec, Canada
<http://www.concretepavements.org/3rdworkshop/>



10th International Conference on Concrete Pavements

Organized by ISCP
July 8-12, 2012 in Quebec City, Canada
<http://www.concretepavements.org/10thiccp>

23rd Annual Concrete Materials Computer Modeling and Durability Workshop, NIST & RILEM

July 16-18, 2012 in Gaithersburg, Maryland, USA
http://www.nist.gov/el/building_materials/modeling-workshop.cfm

MAIREPAV7 Conference

August 28-30, 2012 in Auckland, New Zealand
<http://www.mairepav7.co.nz/>

SWIFT 2012 Conference and Trade Show

September 17 - 21, 2012 in Banff, Alberta, Canada
<http://www.swiftconference.org/>



FHWA ACPT International Conference on Long-Life Concrete Pavements

September 18-21, 2012 in Seattle, Washington, USA
<http://www.fhwa.dot.gov/pavement/concrete/2012conf.cfm>

7th Symposium on Pavement Surface Characteristics (SURF 2012)

September 19-22, 2012 in Norfolk, Virginia, USA
<http://www.cpe.vt.edu/surf2012/index.html>

4th International Conference on Accelerated Pavement Testing (APT 2012)

September 19-21, 2012 in Davis, California, USA
<http://ucprc.ucdavis.edu/APT2012>

Tenth International Conference on Superplasticizers and Other Chemical Admixtures in Concrete

October 2012 in Prague, Czech Republic
<http://www.intconference.org/>

Twelfth International Conference on Recent Advances in Concrete Technology and Sustainability Issues

October 2012 in Prague, Czech Republic
<http://www.intconference.org/>

10th International Symposium on Brittle Matrix Composites (BMC10)

October 15-17, 2012 in Warsaw, Poland
<http://bmc.ippt.gov.pl/>



2nd International Conference on Sustainable Construction Materials: Design, Performance and Application (SusCoM2012)

October 18 -22, 2012 in Wuhan, Hubei Province, China
<http://public.whut.edu.cn/zspj/suscom2012/>

5th International Congress on Sustainability of Road Infrastructures

October 29-31, 2012 in Rome, Italy
<http://www.silvroma.it>

2012 International Pavement Engineering Conference (IPEC)

November 1-3, 2012 in Busan, South Korea
<http://www.ipec2012.or.kr>

2nd International Conference on Civil Engineering and Building Material (CEBM 2012)

November 17-18, 2012 in Hong Kong
<http://www.iasht.org/cebm/>

World Road Association Rural Roads and Developments Seminar

November 28-29, 2012 in San Salvador (Salvador)
<http://www.piarc.org/en/calendar/seminars-piarc/2012-11-28,13990.htm>

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The ISCP Newsletter
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Editor-in-Chief & Art Director:

Amy M. Dean

aimdean@nc.rr.com

Technical Editors:
Corey Zollinger,
Nancy Whiting,
Cristian Gaedicke and
Robert Rodden

Chief Correspondent:
Neeraj Buch, Ph.D

secretary@concretepavements.org

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ISCP invites ISCP members and
friends to submit articles and cal-
endar items to the
Editor-in-Chief for future issues.

ISCP President:
Mark B. Snyder, Ph.D., P.E.
president@concretepavements.org

Vice-President:
José T. Balbo, Ph.D
vice-president@concretepavements.org

Secretary/Treasurer:
Neeraj Buch, Ph.D.
secretary-treasurer@concretepavements.org

Please visit the
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about ISCP.

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Reference Atlas of the World ©2002 National
Geographic Society, Washington, D.C. &
Concise Earth Book World Atlas ©1987 Graphic
Learning International Publishing Corporation,
Boulder, Colorado, Eselle Map Service
AB Stockholm.

All additional sources noted
on perspective pages.

For events taking place
in 2013, please go to:
<http://www.concretepavements.org/calendar.htm>.

**AUGUST
2012
SEPTEMBER
2012**

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**NOVEMBER
2012**