

6th International Conference on Weigh-in-Motion (ICWIM6)

Fairmont Dallas, TX, June 4-7, 2012

General Program

Conference chairs:

Bernard Jacob (IFSTTAR, France), Anne-Marie McDonnell (ConnDOT, United States)

Sunday, June 3, 5:00 – 7:00 pm (Fairmont): ICWIM6 registration

Monday, June 4 (Fairmont)

7:30 – 10:00 am; Mandatory registration (NATMEC deck) and badge collection

Session 1A: WIM Algorithms, Technology and Testing

Mon. June 4, 10:00-12:00 am (*Gold Room*)

Chair: Anne-Marie McDonnell (ConnDOT, United States)

Co-chair: Jesus Leal (CEDEX, Spain)

Ravneet BAJWA, Christopher FLORES, Ram RAJAGOPAL, Pravin VARAIYA, Ben WILD

An experimental wireless accelerometer-based sensor system for applications to WIM and vehicle classification

Robert ABERCROMBIE, Erik FERRAGUT, Shane BOONE

Hidden Markov modeling for Weigh-In-Motion estimation

Piotr BURNOS

Automatic vehicle classification for WIM systems

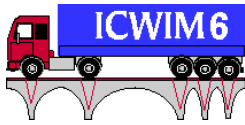
Franziska SCHMIDT, Bernard JACOB

Experimentation of a bridge WIM system in France and applications to bridge monitoring and overload screening

Sio-song IENG, Abderraouf ZERMANE, Franziska SCHMIDT, Bernard JACOB

Analysis of B-WIM signals by statistical tools

12:00 – 1:30 pm: Lunch (*Parisian - for the registered participants with an ICWIM6 package; tickets may be purchased Sunday late afternoon at the registration deck*)



Session 1B: WIM Algorithms, Technology and Testing

Mon. June 4, 1:30-3:30 pm (*Gold Room*)

Chair: Bernard Jacob (Ifsttar, France)

Co-chair: Jesus Leal (CEDEX, Spain)

Eiki YAMAGUCHI	Bridge Weigh-In-Motion by strain measurement of transverse stiffeners
Hua ZHAO, Nasim UDDIN, Eugene OBRIEN	Field verification of a filtered measured moment strain approach to the bridge weigh-in-Motion algorithm
Eugene OBRIEN, Donya HAJIALIZADEH, Nasim UDDIN, Des ROBINSON, Rigobert OPITZ	Strategies for axle detection in bridge Weigh-in-Motion systems
Ales ZNIDARIC, Igor LAVRIC, Jan KALIN, Maja KRESLIN	Using strips to mitigate the multiple-presence problem of BWIM systems
Jason DOWLING, Arturo GONZALEZ, Eugene OBRIEN, Bernard JACOB	Experimental testing of a multiple-sensor bridge Weigh-In-Motion algorithm in an integral bridge

Coffee break

Session 2: WIM for Enforcement

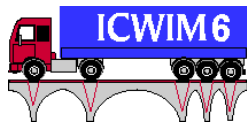
Mon. June 4, 4:00-5:30 pm (*Gold Room*)

Chair: Chia-Pei Chou (NTU, Taiwan)

Co-chair: Victor Dolcemascolo (Ministry of Transport, France)

Raul DIAZ	WIM systems in Chile, a successful experience
Leszek RAFALSKI, Michal KARKOWSKI, Cezary DOLEGA, Janusz WROBEL	ANPR-MMR and WIM for detection of overloaded vehicles
Ivan KRIZ	One year experience with use of certified HS-WIM systems intended for direct enforcement in the Czech Republic
Dan MIDDLETON	Integration of WIM technology into National Institute of Standards and Technology's Handbook 44, 2012 edition

5:30 – 7:30 pm (*Fairmont, Regency Ballroom*): Opening Reception NATMEC/ICWIM6 with posters and exhibits



Tuesday, June 5 (Fairmont)

Opening Session NATMEC/ICWIM6

Tue. June 5, 8:30-10:00 am (*Gold Room*)

Chair: Catherine McGhee (Virginia Center for Transportation Innovation and Research)

Catherine McGHEE	Welcome and Conference Objectives
Bernard JACOB, Anne-Marie McDONNELL	ICWIM6
David WINTER	Join the Team and Working Better Together to Deliver
Michael MORRIS	Improving MPO Decisions with Better Traffic Data
Marc WILLIAM	The Importance of Quality Traffic Data within Texas DOT

Coffee Break

Session 3A: WIM Standard, Calibration, Data Quality and Management

Tue. June 5, 10:30-12:30 am (*Oak Room*)

Chair: David Jones (FHWA, United States)

Co-chair: Marcio Paiva (UFSC, Brazil)

Bernard JACOB, Hans VAN LOO	Standardization of Weigh-In-Motion in Europe
David CORNU, Christian WUETHRICH	Testing and certification of WIM systems
Christiaan SCHILDHAUER, Rob SIK	Modern calibration & verification techniques of WIM data
Piotr BURNOS	Enhanced autocalibration of WIM systems
Gerhard DE WET	Data-based WIM calibration and data quality assessment in South Africa

12:30 – 1:30 pm: Lunch (*Regency Ballroom, for all registered delegates*)

Session Posters

Tue. June 5, 1:30-2:45 pm (*Regency Ballroom*)

Martin SLAVIK, Gerhard DE WET	Checking WIM axle-spacing measurements
Piotr BURNOS, Janusz GAJDA, Ryszard SROKA, Marek STENCEL, Tadeusz ŻEGLEń	Traffic-1: user tailored measuring system for road traffic parameters
Antoine JAUREGUIBERRY, Benoit GEROUDET	Applications from a centralized system of WIM



Session Posters (cont')

Morris DE BEER, Ismail SALLIE	An appraisal of mass differences between individual tyres, axles and axle groups of a selection of heavy vehicles in South Africa
Habtamu ZELELEW, Kevin SENN, Athanassios PAPAGIANNAKIS	Assessment of Weigh-in-motion (WIM) systems: a Nationwide survey
Vincent JANES, Eric KLEIN, Sebastien ROMON, Franziska SCHMIDT, Hai PHAM DOAN	Designing WIM data aggregating systems
Otto FUCIK, Emil DOUPAL	WIM system approved for direct enforcement
Sio-song IENG, Daniel STANCZYK, Eric KLEIN	Statistical study of MS-WIM data acquired in Maulan experimental site
Nasim UDDIN, Talat SALAMA, Virginia SISIOPIKU, Jim RICHARDSON, Hua ZHAO	Early experience with a commercial BWIM system for enforcement
Herbert SOUTHGATE, David JONES	Improving vehicle classifications
Helio GOLTSMAN	WIM in Brazil

Session 3B: WIM Standard, Calibration, Data Quality and Management

Tue. June 5, 2:45-3:30 pm (*Oak Room*)

Chair: David Jones (FHWA, United States)

Co-chair: Marcio Paiva (UFSC, Brazil)

Jesus LEAL	Evaluation of several piezoelectric WIM systems
Eric KLEIN, Daniel STANCZYK, Sio-song IENG	Improvement of weigh-in-motion accuracy by taking into account vehicle lateral position

Coffee Break

Session 3C: WIM Standard, Calibration, Data Quality and Management

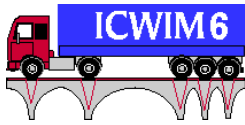
Tue. June 5, 4:00-5:30 pm (*Oak Room*)

Chair: David Jones (FHWA, United States)

Co-chair: Marcio Paiva (UFSC, Brazil)

Deborah WALKER, Olga SELEZNEVA, Dean WOLF	Findings from LTPP SPS WIM systems validation study
Jose RODRIGUEZ-RUIZ, Rafiquel Alam TAREFDER	Weigh-in-Motion data: quality control, axle load spectra, and influence on pavement design
Derong MAI, Rod TUROCHY, David TIMM	Quality control of Alabama weigh-in-Motion data from data user perspective and development of MPEDG traffic inputs
Deborah WALKER, David CEBON	The metamorphosis of LTPP traffic data

8:00 pm: Conference Dinner (*Avanti Restaurant, for the registered participants; tickets may be purchased Sunday late afternoon at the registration desk*)



Wednesday, June 6 (Fairmont)

Session 4A: WIM Implementation, ITS, Traffic Monitoring, Safety and Environment

Wed. June 6, 8:30-10:00 am (*Oak Room*)

Chair: Chris Koniditsiotis (TCA, Australia)

Co-chair: Lily Poulikakos (EMPA, Switzerland)

Andy LEES

High Speed Weigh-in-Motion in the UK

George MINTSIS, Christos
TAXILTARIS, Socrates BASBAS,
Matthew KARLAFTIS

Trends in HGV performance in the main Greek road network:
lessons to learn

Lily POULIKAKOS, Kurt
HEUTSCHI, Patrik SOLTIC

Environmental impact of heavy vehicles based on noise, axle
load and gaseous emissions

Chris KONIDITSIOTIS, Steve
COLEMAN, David CAI

Bringing heavy vehicle on-board mass monitoring to market

Coffee Break

Session 4B: WIM Implementation, ITS, Traffic Monitoring, Safety and Environment

Wed. June 6, 10:30-11:15 am (*Oak Room*)

Chair: Chris Koniditsiotis (TCA, Australia)

Co-chair: Lily Poulikakos (EMPA, Switzerland)

Kimio SOMEYA, Hiroyoshi
OKUDA, Takekazu SHINDO, Yuji
MOCHIZUKI, Norio SAKAI

Application of the center of gravity measurement based on the
dynamic wheel loads measurements of vehicles

Anna CEROVSKA, Martin
OSTRIHOÒ, Stanislav URGELA

Sensors test at their possible failure in the array and its reduced
topologies for the accurate WIM methods

Panel Discussion 1: Enforcement using WIM

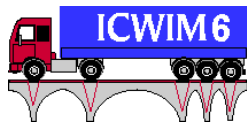
Wed. June 6, 11:15-12:00 am (*Oak Room*)

Chair: Bernard Jacob (IFSTTAR, France)

Co-chair: Tom Kearney (FHWA, United States)

Panelists: Chia-Pei Chou (National Taiwan University), Joe Crabtree (Kentucky's University Research Center, United States), Chris Koniditsiotis (TCA, Australia), Hans van Loo (Kalibra, Netherlands)

12:30 – 1:30 pm: Lunch (*Regency Ballroom, for all registered delegates*)



Session 5A: Application of WIM to Bridges

Wed. June 6, 1:30-3:30 pm (*Oak Room*)

Chair: Ales Znidaric (ZAG, Slovenia)

Co-chair: Andrew Nichols (Marshall University, United States)

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| Richard CHRISTENSON, Anne-Marie MCDONNELL | A dual purpose bridge health monitoring and Weigh-In-Motion system for a steel girder bridge |
| Andrzej NOWAK, Przemyslaw RAKOCZY | WIM based simulation model of site specific live load effect on the bridges |
| Ales ZNIDARIC, Maja KRESLIN, Igor LAVRIC, Jan KALIN | Modeling traffic loads on bridges - A simplified approach using bridge-WIM measurements |
| Hua ZHAO, Nasim UDDIN | Use of Weigh-In-Motion (WIM) data for site-specific LRFR bridge rating |
| David KOSNIK | A Combined Weigh-in-Motion and Structural Health Monitoring System on a Wisconsin-Michigan Border Bridge |
| Florian WEISS, Thomas SPINDLER, Bert SCHUBERT | Weigh-in-Motion on the Köhlbrand bridge in the port of Hamburg |

Coffee Break

Session 5B: Application of WIM to Bridges

Wed. June 6, 4:00-4:45 pm (*Oak Room*)

Chair: Ales Znidaric (ZAG, Slovenia)

Co-chair: Andrew Nichols (Marshall University, United States)

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| Xiaoyi ZHOU, Franziska SCHMIDT, Bernard JACOB | Assessing confidence intervals of extreme traffic loads for bridges |
| Bernard ENRIGHT, Cathal LEAHY, Eugene OBRIEN, Jennifer KEENAHAN | Portable bridge WIM data collection strategy for secondary roads |

Panel Discussion 2: WIM for Infrastructures

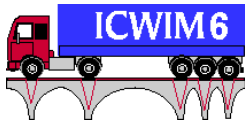
Wed. June 6, 4:45-5:30 pm (*Oak Room*)

Chair: Eugene OBrien (UCD, Ireland)

Co-chair: Athanassios Papagiannakis (University of Texas, United States)

Panelists: Mark Hallenbeck (Washington State University, United States), Lily Poulikakos (EMPA, Switzerland), Valter Tani (UFSC, Brazil), Eigi Yamaguchi (Kyushu Institute of Technology, Japan)

5:30 – 6:30 pm: ISWIM General Assembly (*open to all the participants*)



Thursday, June 7 (Fairmont)

Session 6: Application of WIM to Pavements

Thu. June 7, 8:30-9:45 am (*Oak Room*)

Chair: Morris de Beer (CSIR, South Africa)

Co-chair: Deborah Walker (FHWA, United States)

Lily POULIKAKOS	Applications of weigh-in-motion in pavement engineering
Gustavo OTTO, Leto MOMM, Amir MATTAR VALENTE	Pavement damage due to dynamic load - Brazilian road deterioration test with MS-WIM
Selma YOUSIF, Roanne KELLN, Curtis BERTHELOT, Roberto SOARES, Randy HANSON	Evaluating the role of Weigh-in-Motion in mechanistic pavement analysis

Coffee Break

Closing Session

Thu. June 7, 10:30-12:00 am (*Gold Room*)

Chair: Catherine McGhee (VCTIR, United States)

Sandy GREYSON	An Elected Official's View on the Importance of Quality Traffic Information
Catherine McGHEE	Moving NATMEC Initiatives Forward
Steven JESSBERGER	Traffic Data Initiatives at FHWA
Bernard JACOB, Anne-Marie McDONNELL, Eugene O'BRIEN	ICWIM6 Awards Ceremony
Eugene O'BRIEN	Conclusions of ICWIM6