PRELIMINARY PROGRAM

Transportation Research Board (米国交通運輸研究会議)
4th National Conference on Surface Transportation Weather
第4回陸上交通気象に関する全米会議
7th International Symposium on Snow Removal and Ice Control Technology
第7回除雪と雪氷対策技術に関する国際シンポジウム
Sheraton Indianapolis City Centre
Indianapolis, Indiana
June 16-19, 2008

Monday, June 16, 2008

9:00 a.m. – 7:00 p.m. Registration and Information

Session 1
1:00 p.m. – 3:00 p.m. Welcome
John P. Burkhardt, Indiana Department of Transportation, presiding

Welcome:
- TBD, City of Indianapolis
- Brandye Hendrickson, District Deputy Commissioner, Indiana Department of Transportation

Keynote Addresses:
- Progress in Intermodal and Interagency Actions Since the 3rd National Surface Transportation Weather Symposium
  Samuel P. Williamson, Federal Coordinator for Meteorology, National Oceanic and Atmospheric Administration (NOAA)
- Global Perspectives on the Role of Surface Transportation Weather in Improving Transportation Safety and Operations Efficiency
  William H. Hoffman, Chief Maintenance and Operations Engineer, Nevada Department of Transportation

Charge to Conference/Symposium Participants:
- Identification of gaps in knowledge, understanding and practice, and development of Research Needs Statements (RNS) to address these issues.
- Identification of Conference/Symposium “Practice Ready Papers.”

3:00 p.m. – 3:30 p.m. Break

Session 2
3:30 p.m. – 5:00 p.m. National Perspectives and Assessing Technologies

Wilfrid A. Nixon, University of Iowa
A New Paradigm in Observing the Near Surface and Pavement: Clarus and Vehicle Infrastructure Integration
(Weather08-012) 地上付近や舗装面の観測に関するニューパラダイム: Clarus and VII

Paul Pisano and Patrick J. Kennedy, Federal Highway Administration; Andrew D. Stern, Noblis, Inc.
Winter Operations in View of Vision Zero (Snow08-041) ビジョン・ゼロから見た冬期オペレーション

Torgeir Vaa, SINTEF Roads and Transport; Åge Sivertsen, Norwegian Public Roads Administration

Proposed Test Bed for Surface Transportation Weather Technologies (Weather08-025)
陸上交通気象技術に関する試験の提案

Mark A. Askelson and Leon F. Osborne, University of North Dakota

6:30 p.m. – 8:00 p.m. Reception, Cash Bar
Tuesday, June 17, 2008

7:00 a.m. – 5:00 p.m. Registration and Information
7:00 a.m. – 8:30 a.m. Continental Breakfast

Session 3A
8:00 a.m. – 10:00 a.m. Modeling and Forecasting Temperature in Surface Transportation

Land transportation temperature modeling and forecasting
Leon F. Osborne, Jr., University of North Dakota, presiding

Modeling Rail Temperature Using Real Time Weather Data (Weather08-001)
Yu-Jiang Zhang, ENSCO, Inc.; Sung Lee, Federal Railroad Administration

The Road Temperature Forecast Tool (Weather08-009)
Daniel Battig, University of Applied Sciences - Bern, Switzerland

Spatial and Temporal Mapping of Pavement Temperatures for Optimal Winter Road Maintenance Operations (Snow08-035A)
L. Fu, B. Hashemloo, and F. Feng, University of Waterloo, Canada; Max Perchanok, Ontario Ministry of Transportation

Night icing potential demonstration project (Snow08-045)
Paul J. DeLannoy, AMEC Earth and Environmental; Paul Richard and Bernie MacDonald, Nova Scotia Transportation and Public Works; Shawn Allan, Terry M. Bullock, John D. McClintock, Greg Moffatt, David Robbins, Robert Sayer, and Philip Woodhams, AMEC Earth and Environmental

Session 3B
8:00 a.m. – 10:00 a.m. Characteristics of Materials

Richard L. Hanneman, Salt Institute, presiding

Eutectic Depressants: Relationship of Eutectic, Freezing Point, and Ice Melting Capacity in Liquid Deicers (Snow08-008)
Scott Koefod, Cargill, Incorporated

Amount of Salt on Road Surfaces After Salt Application: Discussion of Mechanisms and Parameters (Snow08-013)
Kai Rune Lysbakken and Harald Norem, Norwegian University of Science and Technology

Wet Dust Sampler: Technological Innovation for Sampling Particles and Salt on Road Surface (Snow08-028)
Per Jonsson, Göran Blomqvist and Mats Gustafsson, Swedish National Road and Transport Research Institute (VTI)

Numerical Evolution of De-Icer Amount on Pavement Surface: Traffic and Weather Influences (Snow08-046)
Marchetti Mario, Duval Rodolphe, and Livet Jean, Centre d'Etudes Techniques de l'Equipement (CETE), France; Maurice Francois and Pecquenard Philippe, Station d'Essais de Matériels Routiers, France; Guillevic Pierre, Laboratoire Central des Ponts et Chaussées (LCPC), France

10:00 a.m. – 10:30 a.m. Break

Session 4A
10:30 a.m. – Noon Using Weather Information to Improve Traffic Safety

Roemer Alfelor, Federal Highway Administration, presiding

Comprehensive Winter Maintenance Management System to Increase Road Safety and Traffic Flow (Snow08-052)

交通の安全性向上と交通流改善のための総合的な冬期維持マネジメントシステム
Thorsten Cypra, *Boschung Mecatronic AG, Switzerland*

**Advanced Road Safety and Weather Warning System** *(Weather08-007)* 高度な交通安全＆気象警報システム
Paul G. Knight, Jonathan Aguero-Valverde, and Paul P. Jovanis, *Pennsylvania State University*

**Improving Traffic Safety Under Adverse Weather Conditions** *(Weather08-018A)* 異常気象時の交通安全の改善
Charla Gaskins, Nathan Huynh, and Emmanuel U Nzewi, *North Carolina A&T State University*

**Session 4B**

10:30 a.m. – Noon **Environmental Stewardship** 環境への責務
Charles C. Goodhart, *Pennsylvania Department of Transportation*, presiding

**Winter Model: Roadside Salt Exposure Under Different Weather Conditions** *(Snow08-026)* ウィンターモデル：異なる気象条件下における塩の路傍への飛散
Göran Blomqvist and Mats Gustafsson, *Swedish National Road and Transport Research Institute (VTI)*

**Impacts of Magnesium Chloride Based-Deicers on Roadside Vegetation** *(Snow08-050)* 塩化マグネシウム・ベースの凍結防止剤が路傍の植生に及ぼす影響
Nichole A Trahan, *University of Colorado*, and Curt M. Peterson, *West Virginia University*

**Road Dust and Air Quality in Sweden** *(Snow08-027)* スウェーデンにおける道路粉塵と大気の状況
Mats Gustafsson, Göran Blomqvist and Per Jonsson, *Swedish National Road and Transport Research Institute (VTI)*

Noon – 1:00 p.m. Lunch

**Session 5A**

1:00 p.m. – 3:00 p.m. **Maintenance Decision Support Systems** 維持管理意志決定支援システム
Paul Pisano, *Federal Highway Administration*, presiding

**Providing Winter Road Maintenance Guidance: Update of the Federal Highway Administration Maintenance Decision Support System (MDSS)** *(Snow08-019)* 冬期道路維持作業ガイダンスの提供：米国連邦道路庁(FHWA)の維持管理意志決定支援システム(MDSS)の最新の状況

**Development of Winter Maintenance Support System: Overview and Status** *(Snow08-022)* 冬期維持管理意志決定支援システムの開発：その概要と現在の状況
Naoto Takahashi, Roberto A. Tokunaga and Motoki Asano, *Civil Engineering Research Institute for Cold Region, Japan*

**Overview of Implementation and Deployment of the Pooled Fund Study Maintenance Decision Support System** *(Snow08-038)* 維持管理意志決定支援システムに関する協同資金研究の実用化と展開の状況

**MDSS Is Not Just for State DOTs** *(Snow08-029)* MDSSは州道路局のためだけのものではない
William (Pat) Kennedy, *City and County of Denver Public Works*

**Session 5B**

1:00 p.m. – 3:00 p.m. **Snow Plow Operations and Equipment** 除雪のオペレーションと機械
Dennis W. Better, *Indiana Department of Transportation*, presiding

**The High Speed-/Environmental Snow Plow** *(Snow08-025)* 高速かつ環境に配慮した除雪プラウ
Pontus Gruhs, *Swedish Road Administration*

**Plowing Wider and Faster on 21st’ Century Highways by Effectively Using 14’ Front Plows and Trailer Plows** *(Snow08-003)* 14フィート幅のフロントプラウとトレーラープラウを有効に活用した21世紀型の広幅・高速プラウ
Robert Glenn Lannert, Missouri Department of Transportation

*GPS Controlled Salt Spreading: From Idea to Implementation* (Snow08-030)

GPS制御による塩散布：アイデアから実用化へ

Freddy Knudsen and Bo Sommer, Danish Road Directorate

*Tools to Gain Faster Snow and Ice Response while Ensuring Preservation of Equipment: Especially with Part-Time or Seasonal Snow Plow Operators* (Snow08-009) 機器保全にも配慮しつつより迅速な除雪対応を目指したツール：特にパートタイムや季節オペレータを考慮して

Larry E. Nelson, Minnesota Department of Transportation

3:00 p.m. – 3:30 p.m. Break

**Session 6**

3:30 p.m. – 5:00 p.m. Application of Weather Information in Transportation Agencies

交通機関における気象情報アプリケーション

Tina Greenfield, Iowa Department of Transportation, presiding

Guidance for Creating and Maintaining Written Snow and Ice Control Plan and Policy Documents (Snow08-001)雪氷管理の計画・方針に関する文書の作成と更新のためのガイドアンス

Duane E. Amstler, Sr., AFM Engineering Services

Follow-Up Study of Winter Standard as a R&D Project (Snow08-042)R&Dプロジェクトとしての冬期道路基準のフォローアップ研究

Torgeir Vaa, SINTEF Roads and Transport; Ivar Hol, Norwegian Public Roads Administration

Integrating Weather into Transportation Operations: A UDOT Case Study (Weather08-005)気象状況に応じた統合的交通オペレーション：ユタ州道路局のケーススタディ

Christopher Strong and Xianming Shi, Montana State University

*Wednesday, June 18, 2008*

7:00 a.m. – 5:00 p.m. Registration and Information

7:00 a.m. – 8:30 a.m. Continental Breakfast

**Session 7A**

8:00 a.m. – 10:00 a.m. Role of Surface Friction in Winter Maintenance

冬期道路管理におけるすべり摩擦係数の役割

Richard M. Balgowan, Hamilton Township, New Jersey, presiding

Approach to Terrain Classification to Improve MDSS Road Condition Forecasts (Snow08-039)MDSSの道路状況予測を改善するための地形分類のアプローチ

Max Perchanok, Ontario Ministry of Transportation

A Probabilistic Model for Discriminating Road Surface Conditions Based on Friction Measurement (Snow08-033A)すべり摩擦係数をベースにした路面状態識別のための一モデル

L. Fu and F. Feng, University of Waterloo; Max Perchanok, Ontario Ministry of Transportation

Feasibility Study on Friction for Winter Road Management (Snow08-020)冬期道路マネジメントのためのすべり摩擦係数活用に関するフィージビリティ研究

Roberto A. Tokunaga, Makoto Funahashi, Naoto Takahashi, and Motoki Asano, Civil Engineering Research Institute for Cold Region, Japan

Measurements of Pavement Condition and Road Weather Environment Within North Dakota Using a Tow-Hitch Mount Road Grip Tester (Snow08-016)ノースダコタにおける牽引型すべり摩擦係数測定器による舗装状態と道路気象環境の計測

Jeffrey S. Tilley, Scott S. Kroeber, and Jennifer Green, University of North Dakota; Diana Clonch, Ohio Department of Transportation; Don Halliday, Halliday Technologies, Inc.
Session 7B

8:00 a.m. – 10:00 a.m. Blowing and Drifting Snow 吹雪・吹きだまり
Richard Wagoner, National Center for Atmospheric Research, presiding

Physical Nature and Prediction of Blowing Snow Within the Roadway Environment (Snow08-018)
道路環境における吹雪の物理特性と予測
Benjamin W. Hershey, Meridian Environmental Technology, Inc. and Leon F. Osborne Jr., University of North Dakota

Geospatial Variability of Roadway Vegetation and Blowing Snow (Snow08-031)
路傍の植生と吹雪の関係
Scott S. Kroeber, Damon Grabow and Leon F. Osborne, Jr., University of North Dakota

Computer-Aided Design of Passive Snow Control Measures (Snow08-054P)
コンピュータによる受動的な吹雪対策設計
Stuart S. Chen, State University of New York at Buffalo

Session 8A

10:00 a.m. – 10:30 a.m. Break

Session 8B

10:30 a.m. – Noon Weather Sensors and Data Collection 気象センサーとデータ収集
Jan Olander, Swedish Road Administration, presiding

Non-Invasive Road Weather Sensors (Weather08-002)
非埋設型の道路気象センサー
Paul Bridge, Vaisala, Inc.

Using the Probe Vehicle to Gather Information on Visibility in Snowstorms (Snow08-006)
吹雪時における視程情報収集のためのプローブカー活用
Masaru Matsuzawa, Yasuhiro Kajiya, Yuma Matsuyama, Civil Engineering Research Institute for Cold Region, Japan; Takashi Nishida, Fuji Heavy Industries Ltd., Japan; and Yasuhiro Nagata, Japan Weather Association

Operational Considerations in the Integration of AVL/MDC Technologies into Decision Support Systems for Maintenance and Operations (Snow08-037)
AVL/MDC技術の維持管理意志決定支援システムへの統合についてのオペレーション面からの考察
John J. Mewes, Robert D. Hart, Benjamin W. Hershey, and Leon F. Osborne, Meridian Environmental Technology, Inc.; David L. Hult, South Dakota Department of Transportation

Session 8B

10:30 a.m. – Noon Relationships Between Weather Events and Traffic Operations 気象イベントと交通オペレーションの関係
Tony Myhra, Cryotech Deicing Technology, presiding

Toward Weather-Responsive Traffic Management on French Motorways (Weather08-014)
フランスの自動車専用道路における気象状況に応じた交通マネジメント
Nour-Eddin EL Faouzi, Olivier De Mouzon, and Romain Billot, INRETS, France

A Long Term Analysis of the Reductions in Traffic Volume Across the State of New Hampshire During Winter Storms (Weather08-011)
暴風雪時におけるニューハンプシャー州全体の交通量減少に関する長期分析
Melissa Grace Wellman, Hometown Forecast Services; Samuel Miller, Plymouth State University; Stephen Gray, New Hampshire Department of Transportation; Joseph Zabransky (Retired), Plymouth State University

Impact of Snow on Video Detection Systems at Signalized Intersections (Weather08-013)
信号交差点におけるビデオ検出システムへの雪の影響
Juan C. Medina, Madhav V. Chitturi, and Rahim F. Benekohal, University of Illinois at Urbana-Champaign
Noon – 1:00 p.m. Lunch

Session 9A
1:00 p.m. – 3:00 p.m. Relationships Between Winter Service and Weather 冬期サービスと気象の関係
Yasuhiko Kajiya, Civil Engineering Research Institute for Cold Region, Japan, presiding

Modeling Winter Maintenance Activities Using Classification Trees (Weather08-010)
ツリー分析手法を用いた冬期維持管理作業のモデリング
Jean Andrey, Alexander Brenning, and Denis Kirchhoff, University of Waterloo; Brian Mills, Environment Canada; Max Perchanok, Ontario Ministry of Transportation

Possibility to Implement the Management Cycle of Winter Maintenance by Performance Measurement (Snow08-007)
冬期道路管理の事業評価におけるマネジメントサイクルの適用可能性
Motoki Asano and Roberto A. Tokunaga, Civil Engineering Research Institute for Cold Region, Japan

Winter Model: Road Condition Sub-Model (Snow08-011) ウィンターモデル：道路状況のサブモデル
Staffan Möller, Swedish National Road and Transport Research Institute (VTI)

Estimating the Relationship Between Snow and Ice Maintenance Performance and Current Weather Conditions (Snow08-053) 雪氷管理の事業評価と現在の気象状態の関係の推定
Thomas H. Maze, Massiel A Orellana, Chris Albrecht, and Alicia Carriquiry, Iowa State University

Session 9B
1:00 p.m. – 3:00 p.m. Weather and Pavements 気象と舗装
William H. Hoffman, Nevada Department of Transportation, presiding

Physical Processes that Affect Runway Surface Conditions During Winter Time - A Conceptual Model (Snow08-014)
冬期の滑走路の路面状態に影響を及ぼす物理的なプロセス – 概念モデル
Alex Klein-Paste, Norwegian University of Science and Technology

Pavement Precipitation Accumulation Estimation System (PPAES) (Snow08-017) 舗装上の降積雪の推定システム
Mark Askelson, University of North Dakota

Temperature and Precipitation Sensitivity Analysis on Pavement Performance (Weather08-019)
気温と降水が舗装のパフォーマンスに与える感度分析
James Trevor Smith, Susan L. Tighe, Brian Mills, and Jean Andrey, University of Waterloo

SafeLane™ Overlay Performance Testing, Winter 2005-06 (Snow08-004)
2005-2006冬期におけるセーフレーン™によるオーバーレイの性能テスト
Wilfrid A. Nixon, University of Iowa

3:00 p.m. – 3:30 p.m. Break

Session 10
3:30 p.m. – 5:00 p.m. Using Weather Information to Improve Driver Decisions ドライバーの意志決定を改善するための気象情報活用
Peter P. Neilley, Weather Services International, Inc., presiding

Personal Weather Advisor: Providing Drivers with In-Vehicle, Real-Time Weather Awareness (Weather08-008A)
パーソナル気象アドバイザー：車載器によるリアルタイム気象警報のドライバーへの提供
Daniel R. Gallagher, Bob Baron, Bob Dreisewerd, Baron Services, Inc.; John McHenry and Don Olerud, Baron Advanced Meteorological Systems

Study on Expression of Winter Road Information and Its Effects on Drivers’ Travel Decision Making (Snow08-021)
冬期道路情報の表現方法がドライバーの交通行動決定に与える影響
Yasuhiko Kajiya, Yasuaki Matsuoka and Tetsuro Matsushima, Civil Engineering Research Institute for Cold Region, Japan

Driving Decisions Related to the Colorado Front Range December 20-21, 2006, Winter Storm (Weather08-023)
コロラド州フロントレンジにおける2006年12月20-21日の暴風雪時のドライバーの行動決定
Sheldon Drobot, University of Colorado
Thursday, June 19, 2008

7:00 a.m. – 11:00 a.m. Registration and Information
7:00 a.m. – 8:30 a.m. Continental Breakfast

Session 11A
8:00 a.m. – 9:30 a.m. Winter Events, Fog and Performance Measures

Winter Events, Fog and Performance Measures
Max S. Perchanok, Ontario Ministry of Transportation, presiding
Role of Risk, Reliability and Probability in the Interaction of Weather and Surface Transportation (Weather08-016A)
Max S. Perchanok, Ontario Ministry of Transportation, presiding
Role of Risk, Reliability and Probability in the Interaction of Winter Events, Fog and Performance Measures

Winter Events, Fog and Performance Measures
Max S. Perchanok, Ontario Ministry of Transportation, presiding
Role of Risk, Reliability and Probability in the Interaction of Weather and Surface Transportation (Weather08-016A)
Max S. Perchanok, Ontario Ministry of Transportation, presiding
Role of Risk, Reliability and Probability in the Interaction of Winter Events, Fog and Performance Measures

Fog Forecast Provision Experiment for a Mountain Pass (Snow08-024)
Yuma Matsuyama, Tatsuo Miyoshi, Yasuaki Matsuda, Masaru Matsuzawa, and Yasuhiko Kajiya, Civil Engineering Research Institute for Cold Region, Japan

Performance Measures for Snow and Ice Control Operations (Snow08-051)
Tom Maze, Chris Albrecht, and Dennis Kroeger, Iowa State University

Session 11B
8:00 a.m. – 9:30 a.m. Benefits and Costs of Winter Maintenance

Benefits and Costs of Winter Maintenance
Leland D. Smithson, American Association of State Highway and Transportation Officials, presiding
Benefits and Costs Associated with Maintenance Decision Support Systems (MDSS) (Weather08-004A)
Christopher Strong, Montana State University; David Huft, South Dakota Department of Transportation

A Snow Removal Cost Estimation Model Using the Snow Removal Unit Cost Curve (Snow08-044)
Shigeyuki Nakamae, Ministry of Land, Infrastructure and Transport, Japan; Jun’ichi Oshima, Snow Research Center, Japan; Takahiro Okawado and Fumihiro Hara, Hokkaido Development Engineering Center, Japan; Shin’ei Takano, Hokkaido University, Japan

9:30 a.m. – 10:00 a.m. Break

Session 12
10:00 a.m. – 11:00 a.m. Conference Summary, Research Needs Statements and ‘Practice Ready Papers’

Conference Summary, Research Needs Statements and ‘Practice Ready Papers’
John P. Burkhardt, Indiana Department of Transportation, and Wilfrid A. Nixon, University of Iowa, presiding