

"Finite Element Modeling of Concrete Shrinkage in Composite Deck Slabs," V.V. Degtyarev, New Millenium Building Systems, Columbia, SC, USA

"Design of New Cold Rolled Purlins by Experimental Testing and Direct Strength Method," V.B. Nguyen, University of Derby, Derby, UK, B. Cartwright and M.A. English, Hadley Industries plc, Smethwick, UK

"Advanced Modeling of Cold-Formed Steel Walls under Fire," J.C. Batista Abreu, Bucknell University, Lewisburg, PA, USA, N. Punati, US Gypsum Corporation, Libertyville, IL, USA, K. R. Prasad, National Institute of Standards and Technology, Gaithersburg, MD, USA and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

"A Combined Direct Analysis and Direct Strength Approach to Predict the Flexural Strength of Z-Purlins with Paired Torsion Braces," M.W. Seek, Old Dominion University, Norfolk, VA, USA, C. Ramseyer, University of Oklahoma, Norman, OK, USA and I. Kaplan, Old Dominion University, Norfolk, VA, USA

1:45 p.m. Break

2:00 p.m. Technical Session No. 10: Shear Walls

Chairpersons:

W. S. Easterling, Virginia Tech, Blacksburg, VA, USA

D. Allen, Super Stud Building Products, Edison, NJ, USA

"Characterization of Cold-Formed Steel Framed Diaphragm Response under In-Plane Loading and Influence of Non-Structural Gypsum Panels," P. Latreille, V. Nikolaidou, C. A. Rogers, McGill University, Montreal, Canada and D.G. Lignos, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

"Seismic Performance Investigation of Cold-Formed Steel Framed Shear Walls with Steel Sheathing," R. Feng and P. Xu, Southeast University, Nanjing, China

"Sheathing Overlapping and Attachment Methods for Cold-Formed Steel Shear Walls with Corrugated Steel Sheathing," M. Mahdavian, University of North Texas, Denton, TX, USA, W. Zhang, Tongji University, Shanghai, China and C. Yu, University of North Texas, Denton, TX, USA

"Simulating the Seismic Performance of Cold-Formed Steel Framed Buildings using Corrugated Sheet Shear Walls," W. Zhang, Tongji University, Shanghai, China, M. Mahdavian, University of North Texas, Denton, TX, USA, Y. Li, Tongji University, Shanghai, China and C. Yu, University of North Texas, Denton, TX, USA

"Experimental Tests for the Seismic Response Evaluation of Cold-Formed Steel Shear Walls Sheathed with Nailed Gypsum-Based Panels," L. Fiorino, V. Macillo, M.T. Terracciano, T. Pali, B. Bucciero and R. Landolfo, University of Naples, Federico II, Naples, Italy

3:15 p.m. Technical Session No. 11: Light-Steel Framing

Chairpersons:

R. Warr, Frameworks Engineering, Atlanta, GA, USA

W.L. Babich, Alpine TrusSteel, Orlando, FL, USA

"Shear Resistance of Cold-Formed Steel Framing Wall with X Strap Bracing," C. Pan, C. Huang, and M. Tsao, Chaoyang University of Technology, Taichung, Taiwan, ROC

"Development of a Method to Generate a Simplified Finite Element Model for an Electrical Switchboard Cabinet," E. Lim, B.J. Goodno and J.I. Craig, Georgia Institute of Technology, Atlanta, GA, USA

"An Improved Two-stage Seismic Analysis Procedure for Mid-Rise Buildings with Vertical Combination of Cold-Formed Steel and Concrete Framing," X. Yuan and L. Xu, University of Waterloo, Waterloo, Canada

"Seismic Modeling and Incremental Dynamic Analysis of the Cold-formed Steel Framed CFS-NEES Building," J. Leng, McGill University, Montreal, Canada, S.G. Buonopane, Bucknell University, Lewisburg, PA, USA and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

"Full-Scale Experimental and Numerical Study about Structural Behavior of Thin-Walled Cold-Formed Steel Building Affected by Ground Settlements Due to Land Subsidence," J.A. Ortiz-Lozano, L. A. Hernández-Castillo, M. Hernández-Marín, J. Pacheco-Martínez, M.E. Zermeño-deLeón and R. Salinas-Salinas, Autonomous University of Aguascalientes, Aguascalientes, Mexico

"Design Method for Cold-Formed Thin-Walled Steel Beams with Built-up Box Section," Y. Li, and Y. Li, Tongji University, Shanghai, China

"An Archetype Mid-Rise Building for Novel Complete Cold-formed Steel Buildings," S. Torabian, Johns Hopkins University, Baltimore, MD, USA, Z. Saneei Nia, University of Tehran, Tehran, Iran and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

5:00 pm Closing Remarks and Adjournment

CONFERENCE DIRECTORS:

Roger A. LaBoube, Director

*Wei-Wen Yu, Founding Director
of the Wei-Wen Yu Center for Cold-Formed Steel Structures,
Missouri S&T*

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CFSEI

Wei-Wen Yu International Specialty Conference on Cold-Formed Steel Structures 2016

Baltimore, Maryland | Royal Sonesta Harbor Court Baltimore
November 9-10, 2016



PROGRAM

Tuesday, November 8, 2016

6-9 p.m. Registration

Wednesday, November 9, 2016

7 a.m. – 8 a.m. Registration

8:00 a.m. Welcoming Remarks

R.A. LaBoube, Missouri University of Science and Technology, Rolla, MO, USA

8:15 a.m. Technical Session No. 1: Member Design

Chairpersons:

G.J. Hancock, University of Sydney, Sydney, Australia

T. Pekoz, Cornell University, Ithaca, NY, USA

“First-order Generalized Beam Theory for Curved Members with Circular Axis,” N. Peres, Universidade de Lisboa, Lisbon, Portugal, R. Gonçalves, Universidad NOVA de Lisboa, Caparica, Portugal and D. Camotim, Universidade de Lisboa, Lisbon, Portugal

“A Finite Element Method for Distortional Buckling Analysis of Thin-Walled Members.” S.Jin, X. Jian, R. Cheng, S. Nie, and M. Cheng, Chongqing University, Chongqing, China

“The Design and Development of New Cold Roll Formed Products by Finite Element Modelling and Optimisation,” V.B. Nguyen, P.K.C. Wood, University of Derby, Derby, UK, M.A. English and M.A. Castellucci, Hadley Industries plc, Smethwick, West Midlands, UK

“Analyses of Thin-Walled Sections under Localised Loading for General End Boundary Conditions – Part 1: Pre-Buckling,” V.V. Nguyen, G.J. Hancock and C.H. Pham, The University of Sydney, Sydney, Australia

“Analyses of Thin-Walled Sections under Localised Loading for General End Boundary Conditions – Part 2: Buckling,” V.V. Nguyen, G.J. Hancock and C.H. Pham, The University of Sydney, Sydney, Australia

“Measured Geometric Imperfections for Cee, Zee, and Built-up Cold-Formed Steel Members,” X. Zhao, B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Stability Analysis of Thin-Walled Members with Curved Cross-Section Parts: Inelastic Behavior,” D. Jobbágy, S. Ádány, Budapest University of Technology and Economics, Budapest, Hungary

“Material Properties of Cold-Rolled Thin-Walled Steel Plates at Elevated Temperatures,” Z. Nie, Y. Li, Tongji University, Shanghai, China

10:15 a.m. Break

10:45 a.m. Technical Session No. 2: Compression Members

Chairpersons:

B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

C.H. Pham, University of Sydney, Sydney, Australia

“Buckling Strength of Cold-Formed Circular Steel Column Subjected to Axial Load,” A. Ito, N. Shimizu, K. Sato and Y. Kawai, Nippon Steel & Sumitomo Metal Corp., Japan

“On the Direct Strength Design of Cold-Formed Steel Columns Failing in Local-Distortional Interactive Modes,” A.D. Martins, D. Camotim and P.B. Dinis, Universidade de Lisboa, Lisbon, Portugal

“Proposal for the Codification of a DSM Design Approach for Cold-Formed Steel Short-to-Intermediate Angle Columns,” P.B. Dinis and D. Camotim, University of Lisboa, Lisbon, Portugal

“Effect of Web Perforation on the Behaviour of Cold-formed Steel C-shape Slender Column Subjected to Non-uniform Cross-sectional Distribution of Elevated Temperature,” S. Yang and L. Xu, University of Waterloo, Waterloo, Canada

“Distortional Buckling Experiment on Cold-formed Steel Lipped Channel Columns with Circle Holes under Axial Compression,” X. Yao, Y. Guo, Nanchang Institute of Technology, Nanchang, China, Z. Nie, Tongji University, Shanghai, China

12:10 p.m. Lunch

12:45 p.m. Technical Session No. 3: Flexural Members

Chairpersons:

M.W. Seek, Old Dominion University, Norfolk, VA, USA

L. Xu, University of Waterloo, Waterloo, Canada

“Numerical Simulations of Solid and Slotted Cold-Formed Steel Channels with Different Boundary Conditions in Shear,” V.V. Degtyarev, New Millennium Building Systems, Columbia, SC, USA and N.V. Degtyareva, South Ural State University, Chelyabinsk, Russia

“Buckling Behaviour of Cold-Formed Steel Beams under Bending and Torsion,” H. Wan, Wuhan University of Technology, Wuhan, China, and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Finite Element Investigations of the Effect of Residual Stress in Cold-Formed Sigma Beams,” F. Wang and J. Yang, School of Naval Architecture, Shanghai, China

“Incorporation of Elastic Local Buckling in a Plain Channel Section Beam Subjected to Double-curvature Bending: An Effective-width Approach,” E. Lim, B.J. Goodno, and J.I. Craig, Georgia Institute of Technology, Atlanta, GA, USA

“Tests of Cold-Formed Ferritic Stainless Steel Beams,” L. Li and B. Young, The University of Hong Kong, Hong Kong, China

“Lateral-Torsional Buckling of General Cold-Formed Steel Beams,” R. S. Glauz, RSG Software, Lee’s Summit, MO, USA

“Unconstrained Cross-Sectional Shape Optimisation of Cold-Formed Steel Beams and Beam-Columns,” B. Wang, B.P. Gilbert, G.L. Bosco, H. Guan, Griffith School of Engineering, Australia and L.H. Teh, University of Wollongong, Wollongong, Australia

2:30 p.m. Break

3:00 p.m. Technical Session No. 4: Shear and Web Crippling

Chairpersons:

A.J. Harrold, BlueScope Buildings North American, Kansas City, MO

R.L. Brockenbrough, R.L. Brockenbrough & Associates, Pittsburgh, PA

“Web Crippling Strength of Cold-Formed Duplex Stainless Steel Lipped Channel-Sections with Web Openings Subjected to Interior-One-Flange Loading Condition,” A.M. Yousefi, J.B.P. Lim, University of Auckland, Auckland, New Zealand, A. Uzzaman, University of Strathclyde, Glasgow, UK, Y. Lian, Queen’s University, Belfast, UK, G. C. Clifton, University of Auckland, Auckland, New Zealand, and B. Young, The University of Hong Kong, Hong Kong, China

“DSM for Web Crippling under Two-Flange Conditions,” P. Natário, N. Silvestre, and D. Camotim, Universidade de Lisboa, Lisbon, Portugal

“Identifying Shear Buckling Coefficients for Channels with Rectangular Web Stiffeners using the Generalised cFSM,” M.A. Rendall, G.J. Hancock and K.J.R. Rasmussen, The University of Sydney, Sydney, Australia

“Experimental Investigation of Cold-Formed C-Sections with Central Square Holes in Shear,” C.H. Pham, A. Pelosi, T. Earls and G.J. Hancock, The University of Sydney, Sydney, Australia

“A Direct Strength Method (DSM) of Design for Channel Sections in Shear with Square and Circular Web Holes,” S.H. Pham, C.H. Pham and G.J. Hancock, The University of Sydney, Sydney, Australia

4:15 p.m. Technical Session No. 5: Technology Transfer

Chairpersons:

R.B. Haws, Nucor, Denton, TX, USA

J.W. Larson, American Iron and Steel Institute, Bethlehem, PA, USA

“New SDI Diaphragm Design Manual,” L. Luttrell, J. Mattingly, Steel Deck Institute, Allison Park, PA, USA, W. Schultz, Nucor Corporation, Norfolk, NE, USA and T. Sputo, Sputo and Lammert Engineering, Gainesville, FL, USA

“Recent Developments in the Australian/New Zealand Standard AS/NZS 4600 for Cold-Formed Steel Structures,” G.J. Hancock, The University of Sydney, Sydney, Australia

“Progress in the Development of ASCE 41 for Cold-Formed Steel,” D. Ayhan, Johns Hopkins University, Baltimore, MD, USA, R.L. Madsen, Devco Engineering, Inc., Corvallis, OR, USA and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“AISI Standards Developed and Updated in 2015 and 2016,” H. Chen, American Institute of Iron and Steel, Washington D.C., USA, R. Brockenbrough, R.L. Brockenbrough and Associates, Pittsburgh, PA, USA and R.B. Haws, Nucor Buildings Group, Denton, TX, USA

“Advancing BIM for Cold-Formed Steel Structures,” A. Johnson, R. Ramirez and C. Yu, University of North Texas, Denton, TX, USA* (* not to be presented)

5:15 p.m. Wei-Wen Yu Outstanding Student Paper and Student Scholar Awards

AISI Award of Appreciation

5:30 p.m. Adjourn

6:00 - 7:00 pm. Reception

Sponsored by:

American Iron and Steel Institute

Cold-Formed Steel Engineers Institute

Metal Building Manufacturers Association

Rack Manufacturers Institute

Steel Deck Institute

Steel Framing Industry Association

Thursday, November 10, 2016

8:00 a.m. Technical Session No. 6: Rack Structures

Chairpersons:

J. Crews, Unarco Material Handling, Springfield, TN, USA

H. Chen, American Iron and Steel Institute, Washington, D.C., USA

“Experimental Investigation into Steel Storage Rack Beam-to-Upright Bolted Connections,” L. Dai, X. Zhao, Tongji University, Shanghai, China and C. Ren, Shanghai University, Shanghai, China

“Industrial Cold-Formed Steel Rack Column Base Fixity and Strength,” F. Roure, Universitat Politècnica de Catalunya, Barcelona, Spain, T. Peköz, Cornell University, Ithaca, NY, USA, M.R. Somalo, J. Bonada, M.M. Pastor, M.M. Casafont, Universitat Politècnica de Catalunya, Barcelona, Spain and J. Crews, Unarco Material Handling, Springfield, TN, USA

“Design of Industrial Cold-Formed Steel Rack Upright Frames for Loads in Cross-Aisle Direction,” F. Roure, Universitat Politècnica de Catalunya, Barcelona, Spain, T. Peköz, Cornell University, Ithaca, NY, USA, M.R. Somalo, J. Bonada, M.M. Pastor, M.M. Casafont, Universitat Politècnica de Catalunya, Barcelona, Spain

8:45 a.m. Technical Session No. 7: Behavior of Systems and Frames

Chairpersons:

T. Sputo, Sputo and Lammert Engineering, Gainesville, FL, USA

C. Yu, University of North Texas, Denton, TX, USA

“Experiments on Column Base Stiffness of Long-Span Cold-Formed Steel Portal Frames Composed of Double Channels,” H.B. Blum and K.J.R. Rasmussen, The University of Sydney, Sydney, Australia

“Characterizing the Load Deformation Behavior of Steel Deck Diaphragms,” P. O’Brien, S. Florig, C.D. Moen, and M.R. Eatherton, Virginia Tech, Blacksburg, VA, USA

“Reduced Order Models for Profiled Steel Diaphragm Panels,” G. Bian, S. Torabian and B.W. Schafer, Johns Hopkins University, Baltimore, MD, USA

9:30 a.m. Break

10:00 a.m. Technical Session No. 8: Connections

Chairpersons:

D. Camotim, Universidade de Lisboa, Lisbon, Portugal

C.D. Moen, Virginia Tech, Blacksburg, VA, USA

“Experimental Investigation of the Effect of Screw Fastener Spacing on the Local and Distortional Buckling Behavior of Built-Up Cold-Formed Steel Columns,” D.C. Fratamico, S. Torabian, K.J.R. Rasmussen, B.W. Schafer

“Resistance of Arc Spot Welds - Update to Provisions,” B. P. Blackburn and T. Sputo

“Tilt Bearing Capacity of Single-Shear Bolted Connections without Washers,” M.E. Uz and L.H. Teh

“Behavior of Cold-Formed Steel Semi Rigid Connections,” R. Freya, Sri Venkatesha College of Engineering, Tamilnadu, India, R. Senthil, Anna University, Chennai, India, W.J. Merin, Sri Venkatesha College of Engineering, Tamilnadu, India, R. Savavanakumar, Anna University, Chennai, India, Kuber and M. Gowtham, Sri Venkatesha College of Engineering, Tamilnadu, India

“Shear Behavior of Screw Connection Between Cold Formed Steel and Gypsum Sheathing at Elevated Temperatures,” W. Chen and J. Ye, Southeast University, Nanjing, China

“Monotonic and Cyclic Backbone Response of Single Shear Sheathing-to-Cold-Formed Steel Screw-Fastened Connections,” F. Tao, R. Cole and C.D. Moen, Virginia Tech, Blacksburg, VA, USA

“Behaviour of Cold-Formed Steel Trusses with Concentric and Eccentric Joint Arrangements using the Howick Rivet Connector,” A. Ahmadi, C.L. Yee, H.J. Shepherd, G.C. Clifton, R. Das and J.B.P. Lim, University of Auckland, Auckland, New Zealand

11:45 a.m. Lunch

12:30 p.m. Technical Session No. 9: Roof and Wall Systems

Chairpersons:

W. L. Shoemaker, Metal Building Manufacturers Association,

Cleveland, OH

L. Teh, University of Wollongong, Wollongong, Australia

“Application of the Direct Strength Method to Steel Deck,” R.K. Dudenbostel, University of Florida, Gainseville, FL, USA and T. Sputo, Sputo and Lammert Engineering, Gainesville, FL, USA