

**Advance Program for
22nd International Specialty Conference on Cold-Formed Steel
Structures 2014**

Tuesday, November 4, 2014

6:00 – 9:00 pm Registration

Wednesday, November 5

7:00 am – 4:00 pm Registration

8:00 am Opening Remarks

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

8:15 am Technical Session No. 1: Member Behavior

“GBTUL 2.0 - A New/Improved Version of the GBT-Based Code for the Buckling Analysis of Cold-Formed Steel Members,” R. Bebiano, D. Camotim, University of Lisbon, Lisbon, Portugal and R. Gonçalves, New University of Lisbon, Caparica, Portugal

“Shape optimisation of cold-formed steel profiles with manufacturing constraints - Part I: Algorithm,” B. Wang, B. P. Gilbert, A. M. Molinier, H. Guan, Griffith University, NSW, Australia and L. H. Teh, University of Wollongong, Wollongong, Australia

“Shape Optimisation of Cold-Formed Steel Profiles with Manufacturing Constraints – Part II: Applications,” B. Wang, B. P. Gilbert, A. M. Molinier, H. Guan, Griffith University, Australia and L. H. Teh, University of Wollongong, Wollongong, Australia

“Understanding the global buckling behavior of thin-walled members with slotted web,” B. Geleji, M. Szedlák, D. Visy and S. Ádány, Budapest University of Technology and Economics, Budapest, Hungary

“Constrained finite element method: demonstrative examples on the global modes of thin-walled members,” S. Ádány, Budapest University of Technology and Economics, Budapest, Hungary

“Improved Effective Width Method Considering Distortional Buckling for Cold-Formed Thin-walled Steel Members with Lipped Channel Section,” X. Yao and Y. Li, Tongji University, Shanghai, China

“Laser scanning to develop three-dimensional fields for the precise geometry of cold-formed steel members,” X. Zhao and B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

10:00 am Break

10:30 am Technical Session No. 2: Compression Members

“Finite Element analysis of cold-formed dimpled steel columns,” V.B. Nguyen, M.A. English and M.A. Castellucci, Hadley Industries plc, Smethwick, West Midlands, UK

“The Effects of End Conditions on the Load Capacity of Cold-Formed Steel Column Members of Lipped Channel Cross-Section with Perforations Subjected to Compression Loading,” M. Macdonald and M. P. Kulatunga, Glasgow Caledonian University, Glasgow, UK

“Tailoring Compression Performance of Cold-Formed Steel Columns,” T. Ekmekyapar, M. T. Gogus and M. Özakca, University of Gaziantep, Gaziantep, Turkey

“Compressive Strength of Cold-formed Steel C-Shape Columns with Slotted Holes,” L. Xu, University of Waterloo, Waterloo, Canada, Y. Shi, Chang’an University, Xi’an, China and S. Yang, University of Waterloo, Waterloo, Canada

“On the Influence of Local-Distortional Interaction in the Behavior and Design of Cold-Formed Steel Web-Stiffened Lipped Channel Columns,” A. D. Martins, P. Borges Dinis, D. Camotim, University of Lisbon, Lisbon, Portugal and P. Providência, University of Coimbra, Coimbra, Portugal

“Cold-Formed Steel Lipped Channel Columns Undergoing Local-Distortional-Global Interaction: Experimental and Numerical Investigation”, E. S. Santos, COPPE, Federal University of Rio de Janeiro, Brazil, P. B. Dinis, University of Lisbon, Lisbon, Portugal, E. M. Batista, COPPE, Federal University of Rio de Janeiro, Brazil and D. Camotim, University of Lisbon, Lisbon, Portugal

“Numerical Studies on the Composite Action and Buckling Behavior of Built-Up Cold-Formed Steel Columns,” D. C. Fratamico and B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

12:15 pm Lunch

1:00 pm Technical Session No. 3: Flexural Members

“Cold-formed Steel Channel Sections with Web Stiffeners Subjected to Local and Distortional Buckling — Part I: Tests and Finite Element Analysis,” L. Wang and B. Young, The University of Hong Kong, Hong Kong, China

“Cold-formed Steel Channel Sections with Web Stiffeners subjected to Local and Distortional Buckling — Part II: Parametric Study and Design Rule,” L. Wang and B. Young, The University of Hong Kong, Hong Kong, China

“Numerical Studies of Rivet-Fastened Rectangular Hollow Flange Channel Beams,” R. Siahaan, P. Keerthan and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Section Moment Capacity Tests of Rivet-Fastened Rectangular Hollow Flange Channel Beams,” R. Siahaan, P. Keerthan and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Developments in the Finite Strip Buckling Analysis of Plates and Channel Sections under Localised Loading,” G. J. Hancock and C. H. Pham, University of Sydney, Sydney, Australia

“The Behaviour of Cold-Formed C-Sections with Square Holes in Shear,” C. H. Pham, Y. H. Chin, P. Boutros and G. J. Hancock, University of Sydney, Sydney, Australia

“Experimental Study of Longitudinally Stiffened Web Channels Subjected Predominantly to Shear,” L. A. Bruneau, C. H. Pham and G. J. Hancock, University of Sydney, Sydney, Australia

“Numerical Studies of Collapse Behaviour of Multi-Span Beams With Cold Formed Sigma Sections,” F. L. Wang, J. Yang, University of Birmingham, Birmingham, UK and J. Lim, Queen’s University, Belfast, UK

3:00 pm Break

3:30 pm Technical Session No. 4: Beam-Column Members

“Development of a new beam-column design method for cold-formed steel lipped channel members,” S. Torabian, B. Zheng and B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Cold-formed Lean Duplex Stainless Steel Rectangular Hollow Sections in Combined Compression and Bending,” Y. Huang and B. Young, The University of Hong Kong, Hong Kong, China

“Experimental investigation on ultimate capacity of eccentrically-compressed cold-formed beam-columns with lipped channel sections,” Y. Li, Y. Li and Y. Song, Tongji University, Shanghai, China

4:15 pm Technical Session No. 5: Technology Transfer

“Steel Deck Institute Design Manuals for Floor and Roof Deck,” T. Sputo, Steel Deck Institute, Glenshaw, PA

“AISI Newly Developed Standard AISI S310-13, North American Standard for the Design of Profiled Steel Diaphragm Panels,” J. Mattingly, Consultant, Roselle Park, NJ, USA and H. Chen, American Iron and Steel Institute, Washington, DC, USA

“The 2013 AISI Cold-Formed Steel Design Manual,” J. Buckholt, R.C. Kaehler, Computerized Structural Design, S.C, Milwaukee, WI, USA and H. Chen, American Iron and Steel Institute, Washington, DC, USA

5:00 pm Recognition of Wei-Wen Yu Outstanding Student Paper and Student Scholars

5:15 pm Adjourn

6:00 pm Reception

Sponsored by:

American Iron and Steel Institute
Cold-Formed Steel Engineers Institute
Metal Building Manufacturers Association
Rack Manufacturers Association
Ridg-U-Rak, Inc.
Steel Deck Institute
Steel Framing Industry Association

Thursday, November 6, 2014

8:00 am Technical Session No. 6: Composite Construction

“Bond-Slip Characteristics between Cold-Formed Metal and Concrete,” Y. Majdi, Arup, New York, NY, USA, C. T. Hsu, New Jersey Institute of Technology, Newark, NJ, USA and S. Punurai, Expressway Authority of Bangkok, Bangkok, Thailand

“Finite Element Modeling of New Composite Floors Having Cold-Formed Steel and Concrete Slab,” Y. Majdi, Arup, New York, NY, USA, C. T. Hsu and M. Zarei, New Jersey Institute of Technology, Newark, NJ, USA

“Strain and Stress Distributions in Composite Deck Slabs: A Numerical Study,” V. V. Degtyarev, Metal Dek Group, a unit of CSi, Columbia, SC, USA

“Study on the flexural capacity of cold-formed steel joists-OSB composite floors,” X.H. Zhou, Chongqing University, Chongqing, China, Y. Shi, Chang’an University, Xi’an, China, R.C. Wang, Shannxi Electric Power Exploration & Design Institute, Taiyuan, China and Y.J. Liu, Chang’an University, Xi’an, China

“Design Method of Bending Load-Carrying Capacity for Sandwich Panels with Different Metal Panel on Both Sides,” Y. Guo, X. Yao and K. Liu, Nanchang Institute of Technology, Nanchang, China

9:15 Technical Session No. 7: Roof and Wall Systems

“Acoustic performance of different cold-formed studs in double-leaf walls by Finite Element analysis and experiment,” V.B. Nguyen, T. Morgan, M.A. English and M.A. Castellucci, Hadley Industries plc, Smethwick, West Midlands, UK

“Fire resistance prediction of load bearing cold-formed steel walls lined with gypsum composite panels,” W. Chen and J. Ye, Southeast University, Nanjing, China

“Improvements to the Prediction of Brace Forces in Z- Purlin Roof Systems with Support + Third Point Torsion Bracing,” M. W. Seek, Old Dominion University, Norfolk, VA, USA

“Numerical Investigation of Cold-Formed Steel Top-Hat Purlins”, A. Uzzaman, University of Strathclyde, Glasgow, UK, A. Wrzesien, Capital Steel Limited, Renfrewshire, UK, R. Hamilton, University of Strathclyde, Glasgow, UK, J.B.P. Lim, University of Auckland, Auckland, New Zealand and D. Nash, University of Strathclyde, Glasgow, US

10:15 am Break

10:45 am Technical Session No. 8: Rack Structures

“Calculation for Moment Capacity of Beam-to-Upright Connections of Steel Storage Pallet Racks,” T. Wang, X. Zhao and Y. Chen, Tongji University, Shanghai, China

“Influence of diagonal bracing restraint on cold-formed steel perforated columns under axial compression,” C. Ren and X. Zhao, Tongji University, Shanghai, China

11:15 pm Technical Session No. 9: Behavior of Systems and Frames

“Simplified Seismic Design for Mid-Rise Buildings with Vertical Combination of Cold-Formed Steel and Concrete Framing,” X.L. Yuan and L. Xu, University of Waterloo, Waterloo, Canada

“Investigation on seismic performance of cold-formed steel portal frames,” Y. Li, Z. Xu, Y. Li and Y. Peng, Tongji University, Shanghai, China

“Effect of Stressed-Skin Action on the Behaviour of Cold-Formed Steel Portal Frames,” A.M. Wrzesien, University of Strathclyde, Glasgow, UK, J. B.P. Lim, University of Auckland, Auckland, New Zealand and R.M. Lawson, University of Surrey, Guildford, UK

“Effect of Stressed-Skin Action on Optimal Design of a Cold-Formed Steel Portal Framing System,” D. T. Phan, Universiti Tunku Abdul Rahman, Kuala Lumpur, Malaysia, A. M. Wrzesien, University of Strathclyde, Glasgow, UK, J. B.P. Lim, University of Auckland, Auckland, New Zealand and I. Hajirasouliha, University of Sheffield, Sheffield, UK

12:00 pm Lunch

12:45 pm Technical Session No. 10: Connections

“Pull-through Failure Tests of Thin Steel Roof Battens under Wind Uplift Loads,” M. Sivapathasundaram and M. Mahendran, Queensland University of Technology, Brisbane, Australia

“Structural Strength of Lapped Cold-Formed Steel Z-shaped Purlin Connections with Vertical Slotted Holes,” J. Liu, L. Xu, University of Waterloo, Waterloo, Canada and S. Fox, Canadian Sheet Steel Building Institute, Cambridge, Canada

“Design Equations for Tensile Rupture Resistance of Bolted Connections in Cold-Formed Steel Members,” L. H. Teh, University of Wollongong, Wollongong, Australia and B. P. Gilbert, Griffith University, Gold Coast, Australia

“Direct Strength Method for Ultimate Strength of Bolted Moment-Connections between Cold-Formed Steel Channel Members,” J. B.P. Lim, University of Auckland, Auckland, New Zealand, G. J. Hancock, University of Sydney, Sydney, Australia, G. C. Clifton, University of Auckland, Auckland, New Zealand and C. H. Pham, University of Sydney, Sydney, Australia

“Development of a Novel Pinned Connection for Cold-Formed Steel Trusses,” C. D. Mathieson, G. C. Clifton and J. B.P. Lim, University of Auckland, Auckland, New Zealand

“Towards Load-Deformation Models for Screw-Fastened Cold-Formed Steel-to-Steel Shear Connections,” S. Corner, C. Ding, D. A. Padilla-Llano, C. D. Moen and M. Eatherton, Virginia Tech, Blacksburg, VA, USA

2:15 Break

2:30pm Technical Session No. 11: Shear Walls

“Innovative Cold-Formed Steel Framed Shear Wall Sheathed with Corrugated Steel Sheets: Experiments and Dynamic Analysis,” C. Yu, G. Yu, University of North Texas, Denton, TX, USA and J. Wang, Tsinghua University, Beijing, China

“Lateral Loading Response of CFS Framed Shear Walls Sheathed with Cement Board Panels,” N. Baldassino, M. Accorti, R. Zandonini, University of Trento, Trento, Italy, F. Scavazza, Cogi s.r.l, Calliano, Italy and C.A. Rogers, McGill University, Montreal, Canada

“In-Plane Behavior of Cold-Formed Steel-Framed Wall Panels Sheathed with Fibre Cement Board,” R. Shahi, N. Lam, University of Melbourne, Parkville, Australia, E. Gad, I. Saifullah, J. Wilson, Swinburne University of Technology, Hawthorn, Australia, and K. Watson, National Association of Steel-Framed Housing Inc., Hartwell, Australia

“Fastener-Based Computational Models with Application to Cold-Formed Steel Shear Walls,” G. Bian, Johns Hopkins University, Baltimore, MD, USA, S. G. Buonopane, Bucknell University, Lewisburg, PA, USA, H. H. Ngo and B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Evaluation of the Seismic Performance of Light Gauge Steel Walls Braced with Flat Straps,” O. Iuorio, V. Macillo, M.T. Terracciano, T. Pali, L. Fiorino and R. Landolfo, University of Naples “Federico II,” Naples, Italy

3:45 pm Technical Session No. 12: Light-Steel Framing

“Fragility curves for thin-walled cold-formed steel wall frames affected by ground settlements due to land subsidence,” L. A. Hernández-Castillo, J. A. Ortiz-Lozano, M. Hernández-Marín, J. Pacheco-Martínez, M. E. Zermeño-deLeón, University of Aguascalientes, Aguascalientes, México, J. J. Soto-Bernal, Instituto Tecnológico de Aguascalientes, Aguascalientes, México, J. Ramos-RuizFlores and M. A. Soto-Zamora, University of Aguascalientes, Aguascalientes, México

“Cold-Formed Steel Framing Building Test Model,” Y. Li, R. Ma and Z. Shen, Tongji University, Shanghai, China

“Experimental Seismic Behavior of the CFS-NEES Building: System-Level Performance of a Full-Scale Two-Story Light Steel Framed Building,” K.D. Peterman, Johns Hopkins University, Baltimore, MD, USA, Rob Madsen, Devco Engineering, Enterprise, OR, USA and B.W. Schafer, Johns Hopkins University Baltimore, MD, USA

“Towards Quantifying Beneficial System Effects In Cold-Formed Steel Wood-Sheathed Floor Diaphragms,” A. Chatterjee, Virginia Tech, Blacksburg, VA, USA, Y. Xiang, University of Massachusetts Amherst, Amherst, MA, USA, C. D. Moen, Virginia Tech, Blacksburg, VA, USA, S. R. Arwade, University of Massachusetts Amherst, Amherst, MA, USA and B. W. Schafer, Johns Hopkins University, Baltimore, MD, USA

“Local Buckling Hysteretic Nonlinear Models for Cold-Formed Steel Axial Members,” D.A. Padilla-Llano, C.D. Moen and M.R. Eatherton, Virginia Tech, Blacksburg, VA, USA

5:00pm Closing Remarks and Adjournment