Structural Stability Research Council Annual Stability Conference 2020

Atlanta, Georgia, USA 21-24 April 2020

ISBN: 978-1-7138-1203-6

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Proceedings Compiled by Rachel H. Jordan SSRC Coordinator

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Structural Stability Research Council (SSRC) c/o AISC 130 E. Randolph Street, Suite 2000 Chicago, IL 60601-6204 USA

Phone: (312) 670-7015 Email: ssrc@aisc.org Web: www.ssrcweb.org

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2020 SSRC Annual Meeting

Session SS1 - Stability of Beams and Girders

- Experimental Study on Steel Tub Girders with Modified Cross-Section Details Stalin Armijos-Moya, Todd Helwig, Michael Engelhardt, Patricia Clayton, and Eric Williamson, The University of Texas at Austin, Austin, Texas; Yang Wang, Stress Engineering Services, Houston, Texas
- Shear Strength of Cold-Formed Steel Flexural Members Connected Using Clip Angles Cheng Yu and Zhishan Yang, University of North Texas, Denton, Texas; Yu Tian, Beijing University of Technology, Beijing, China

Session SS2 – Stability at Elevated Temperatures

- Stability of Composite Axial Members Under Fire Loading Preshit Wazalwar, Ataollah Taghipour Anvari, and Amit H. Varma, Purdue University, West Lafayette, Ind.; Saahastranshu R. Bhardwaj, The University of Alabama, Tuscaloosa, Ala.
- Role of Transient Creep in Fire Induced Progressive Collapse of Steel Framed Buildings Venkatachari S. and Kodur V. K. R., Michigan State University, East Lansing, Mich.
- Stability of SpeedCore Walls under Fire Loading: Summary of Numerical Analyses Ataollah Taghipour Anvari, Preshit Wazalwar and Amit H. Varma, Purdue University, West Lafayette, Ind.; Saahastaranshu R. Bhardwaj, The University of Alabama, Tuscaloosa, Ala.

SSRC Annual Stability Conference

Session S1 – Stability of Wall and Roofing Systems

- Moment-Rotation Characterization of Cold-Formed Steel Joist-to-Ledger Connections with Variable Sheathing Hernan Castaneda and Kara D. Peterman, University of Massachusetts Amherst, Amherst, Mass.
- Investigations on Buckling Behavior of Intermittently Fastened Cold-Formed Steel Built-Up Columns Using Spline Finite Strip Method Akshay Mangal Mahar and S. Arul Jayachandran, Indian Institute of Technology Madras, Chennai, India
- Experimental Response of Cold-Formed Steel Walls with Bridging and Sheathing Benjamin W. Schafer, Boyu Qian, Akhil Nayyar and Shahan Torabian, Johns Hopkins University, Baltimore, Md.

Session S2 – Advances in Stability Analysis

103 • A Geometrically Exact Curved Thin-Walled Beam Finite Element Accounting for Cross-Section Deformation

Nuno Peres and Rodrigo Gonçalves, Universidade Nova de Lisboa, Caparica, Portugal; Dinar Camotim, Universidade de Lisboa, Lisbon, Portugal

- An Assessment of the Eurocode 3 Provisions for Lateral-Torsional Buckling of I-Sections under Uniaxial and Biaxial Bending Rodrigo Gonçalves, Universidade Nova de Lisboa, Caparica, Portugal
- Constrained Shell Finite Element Method for Stability Analysis of Thin-Walled Steel Members with Tapered Sections
 Sheng Jin, Shuang Xu, and Fang Huang, Chongqing University, Chongqing, China; Zhanjie Li, SUNY Polytechnic Institute, Utica, N.Y.

Session S3 – Stability of Columns

- The Effect of Transverse Stiffeners on the Torsional Buckling of Thin-Walled Columns Trung Hoang and Sandor Adany, Budapest University of Technology and Economics, Budapest, Hungary
- The Interaction of Section and Member Slenderness on the Behavior of High Strength Composite Filled Tube (CFT) Members
 Abdullah M. Alghossoon and Amit H. Varma, Purdue University, West Lafayette, Ind.
- Global-Global Interaction in Cold-Formed Steel Channel Columns: Relevance, Post-Buckling Behavior, Strength and DSM Design Pedro B. Dinis, Dinar Camotim, and André D. Martins, Universidade de Lisboa, Lisbon, Portugal; Alexandre Landesmann, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
- Axial Strength and Stability Behaviour of Cold-Formed Steel Battened Closed Section Columns M. Adil Dar, Dipti Ranjan Sahoo, and Arvind K. Jain, Indian Institute of Technology Delhi, New Delhi, India
- Experimental Investigation on Cold-Formed Steel Stiffened Lipped Channel Columns Undergoing Local-Distortional Interaction
 Man-Tai Chen, Shanghai Jiao Tong University, Shanghai, China; Ben Young, The Hong Kong Polytechnic University, Hong Kong, China; André D. Martins, Dinar Camotim, and Pedro B. Dinis, Universidade de Lisboa, Lisbon, Portugal
- Stub Column Response in Light of Local vs Distortional Buckling Shahabeddin Torabian, Gaurav Somnath Chobe, and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; James K. Crews, Unarco Material Handling, Inc., Springfield, Tenn.

Session S4 – Special Topics in Structural Stability

- Geometric Imperfection Measurements of Cold-Formed Steel Members Using a Portable Non-Contact 3D Laser Scanner
 Yu Xia and Hannah B. Blum, University of Wisconsin-Madison, Madison, Wis.
- Computational Study of Elastic Buckling and Post-Buckling Strength of Steel Decks in Bending

Vitaliy V. Degtyarev, New Millennium Building Systems, Columbia, S.C.

 Stability of Steel Columns Subjected to Near-Field Detonations Yongwook Kim and Jarett Rooney, Manhattan College, Riverdale, N.Y. N/A • Post-Buckling Strength and Ductility Evaluation of Thin-Walled Steel Tubular Columns with Graded Thickness under Cyclic Lateral Loading Iraj H. P. Mamaghani, Wiriyachai Roopkumdee and Qusay Al-Kaseasbeh, University of North Dakota, Grand Forks, N.D.

Session S5 – Stability of Structural Systems

 The Effect of Shear Coexistent with Axial Compression on Transverse Stiffeners in Longitudinally Stiffened Plates

Charles M. King, COWI North America, Florham Park, N.J.

- Strength and Stiffness Requirements for Beam Torsional Bracing Yangqing Liu, Tongji University, Shanghai, China; Balázs Kövesdi, Budapest University of Technology and Economics, Budapest, Hungary; Todd A. Helwig, University of Texas at Austin, Austin, Texas
- Bracing Requirements to Improve System Buckling of Narrow Girder Systems Balázs Kövesdi, Budapest University of Technology and Economics, Budapest, Hungary; Yangqing Liu, Tongji University, Shanghai, China; Todd A. Helwig, University of Texas at Austin, Austin, Texas

Session S6 – Stability under Seismic Loading

- Study of Story Drift Limits in Steel Buildings Subjected to Seismic Forces Andres F. Robalino, Santiago R. Zaruma, and Telmo A. Sanchez, ADSTREN, Quito, Ecuador
- Seismic Response Predictions From 3D Steel Braced Frame Building Simulations Hamid Foroughi, Shahabeddin Torabian, and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Gengrui Wei and Matt R. Eatherton, Virginia Tech, Blacksburg, Va

Session S7 – Presentation Session for Beedle and McGuire Awards*

*The papers from this session will be included with the 2021 Proceedings

Session S8 – Stability of Members under Combined Axial and Flexural Loads

- Interaction Strength of Steel-Concrete Composite Beam-Columns Including the Balance Point Mark D. Denavit, University of Tennessee, Knoxville, Knoxville, Tenn.
- Strength of Cold Formed Sections Subjected to Axial Compressive Force and Bending Moments M. T. Hanna and Mohamed Massoud, Housing and Building National Research Center, Cairo, Egypt; E. E. Amoush, Higher Technological Institute, Cairo, Egypt
- Study on the Influence of Measured Geometric Shape Deviations on the Deformation Capacity and Post-Buckling Behavior of Hollow Sections Loaded in Compression and Bending Andreas Müller and Andreas Taras, ETH Zürich, Zürich, Switzerland
- Investigation on the Stability Behaviour of Cold-Formed Steel Beam-Column Members under Biaxial Bending

Sevugan Rajkannu J. and Arul Jayachandran S., Indian Institute of Technology Madras, Chennai, India

 Development of a Generalized Slenderness-Based Resistance Method for the Design of High-Strength Steel Hollow Section Beam-Columns Andrea Toffolon, Institute of Structural Engineering, Bundeswehr University Munich, Neubiberg, Germany; Andreas Taras, ETH Zürich, Zürich, Switzerland

Session S9 – Stability of Wall and Roofing Systems

 Seismic Performance of Double-Skin Composite Walls with Recycled Aggregate Concrete Infill and Corrugated Faceplates Qiuhong Zhao and Yikang Li, Tianjin University, Tianjin, China; Ying Tian, University of Nevada, Las Vegas, Nev.

Session 10 – Advances in Stability Analysis

- Flexural-Torsional Failure and DSM Design of CFS Lipped-Channel and Rack-Section Columns at Elevated Temperatures Antonio Albuquerqu Bicelli and Alexandre Landesmann, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; Dinar Camotim and Pedro Borges Dinis, Universidade de Lisboa, Lisbon, Portugal
- Modeling the Nominal Flexural Strength of W-Shape Beams Using a New Inelastic Model Barry T. Rosson, Florida Atlantic University, Boca Raton, Fla.; Matthew F. Fadden, Wiss, Janney, Elstner Associates, Inc., Boca Raton, Fla.
- Analysis of Non-Symmetric Cross-Sections Relative to the Provisions of AISC 360-10
 Edward J. Sippel and Hannah B. Blum, University of Wisconsin-Madison, Madison, WI; Ronald D.
 Ziemian, Bucknell University, Lewisburg, Pa.
- New Formulations for the Cross-Sectional Strength of High-Strength Steel Rectangular and Square Hollow Sections Using a Generalized Slenderness-Based Resistance Method Andrea Toffolon, Bundeswehr University Munich, Munich, Germany; Andreas Taras, ETH Zurich, Zürich, Switzerland

Session S11 – Topics in Local Stability

- Buckling and Distortion Induced Fatigue of Curved Steel Plate Girders with Slender Webs Mehran M. Jalali, Justin D. Marshall, and James S. Davidson, Auburn University, Auburn, Ala.
- A Continuation on the Influence of Loaded Width on Web Compression Buckling Jacob Witte, Lynch, Harrison, & Brumleve, Inc., Indianapolis, Ind.; Kadir Sener, Auburn University, Auburn, Ala.; Amit Varma, Purdue University, West Lafayette, Ind.
- A Nondestructive Method to Find the Buckling Capacity for Thin Shells Kshitij Kumar Yadav and Simos Gerasimidis, University of Massachusetts Amherst, Amherst, Mass.

626 Local Buckling Analysis of Multi-Sided Steel Tube Sections
 Zannatul Mawa Dalia and Anjan Bhowmick, Concordia University, Montreal, Canada

Session S12 – Stability of Structural Systems

- Post Buckling Strength of Single Layer Domes under Distributed Loading Prahlad Dara, Raghavan Ramalingam, and Gorripotu Kishorekumar, National Institute of Technology, Tiruchirappalli, India
- Lateral Bracing of Beams Provided by Standing Seam Roof System: Concepts and Case Study Gengrui Wei and Matthew R. Eatherton, Virginia Polytechnic Institute and State University, Blacksburg, VA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Michael Seek, Old Dominion University, Norfolk, Va.

Session S13 – Topics in Lateral-Torsional Buckling

- Lateral-Torsional Deformations of C-Section and Z-Section Beams with Continuous Bracing Raymond H. Plaut, Virginia Tech, Blacksburg, VA; Cristopher D. Moen, RUNTOSOLVE, LLC, Baltimore, Md.
- Simplified Solutions for Estimating the Lateral-Torsional Buckling Resistance of Nonprismatic Girders
 Matthew C. Reichenbach, Todd A. Helwig, and Michael D. Engelhardt, University of Texas at Austin, Austin, Texas
 Strength and Stability of Point-Symmetric Cold-Formed Steel Members Undergoing Lateral-
- Strength and Stability of Point-Symmetric Cold-Formed Steel Members Undergoing Lateral-Torsional Buckling Shuo Wang and Benjamin W. Schafer, Johns Hopkins University, Baltimore, Md.; Robert S. Glauz, RSG Software, Lee's Summit, Mo.
- Large-Scale Experimental Lateral Torsional Buckling Tests of Welded I-Section Members Ryan Slein, Joshua S. Buth, Wajahat Latif, Ajit M. Kamath, Ammar A. Alshannaq, Ryan J. Sherman, and Donald W. White, Georgia Institute of Technology, Atlanta, Ga.; David W. Scott, Georgia Southern University, Statesboro, Ga.