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SSRC 2018 ANNUAL MEETING

Session SS1 – TECHNICAL PRESENTATIONS: LOCAL MEMBER STABILITY

- Local Buckling Limit States in Rod-Braced Metal Building Frames

  Hamid Foroughi, Chengda Ji and Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD; Cristopher D. Moen, NBM Technologies, Inc., Blacksburg, VA

- Toward the Recognition of Unaccounted for Flange Local Buckling and Tension Flange Yielding Resistances in the ANSI/AISC 360 *Specification*

  Oguzhan Togay and Donald W. White, Georgia Institute of Technology, Atlanta, GA

- Computational Study of Tension Field Action in Gable Frame Panel Zones

  Gengrui Wei, Ioannis Koutromanos, Thomas M. Murray and Matthew R. Eatherton, Virginia Polytechnic Institute and State University, Blacksburg, VA

- Reference Resistance Design of Spirally Welded Tapered Tubes

  Abdullah Mahmoud, Shahabeddin Torabian and Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD; Angelina Jay, Fariborz Mirzaie and Andrew T. Myers, Northeastern University, Boston, MA

Session SS2 – TECHNICAL PRESENTATIONS: STABILITY OF BRIDGES

- Horizontal Curvature Impacts on Steel Plate Girder Shear Buckling

  Bernard A. Frankl, HDR, Lincoln, NE; Daniel G. Linzell, University of Nebraska-Lincoln, Lincoln, NE

- Stability Analyses for a Multi-Span Tied Steel Arch Bridge: AASHTO Effective Length Method, Eigenvalue Analysis and AISC Direct Analysis Method

  Jonathan Eberle and Soham Mukherjee, AECOM, Mechanicsburg, PA; Paul Kettleson, Minnesota Department of Transportation, Oakdale, MN; Daniel Baxter and Alexandra Willoughby, Michael Baker International, Minneapolis, MN

- Flexural Resistance of Longitudinally Stiffened Curved I-Girders

  Lakshmi P. Subramanian, Indian Institute of Technology Madras, Chennai, India; Donald W. White, Georgia Institute of Technology, Atlanta, GA

- Experimental Study on the Interaction of Partial Top Lateral and K-Frame Bracing on Tub Girders

  Stalin V. Armijos Moya, Yang Wang, Todd A. Helwig, Michael D. Engelhardt, Patricia Clayton and Eric Williamson, University of Texas at Austin, Austin, TX

SSRC 2018 ANNUAL STABILITY CONFERENCE

Session S1 – STABILITY OF BUILT-UP GIRDERS

- Welcome to the 2018 SSRC Annual Stability Conference
  Todd A. Helwig, University of Texas at Austin, Austin, TX

- Flange Buckling Behavior of Trapezoidally Corrugated Web Girders Subjected to Bending and Shear Interaction

  Bence Jáger and László Dunai, Budapest University of Technology and Economics, Budapest, Hungary

- Improved Characterization of the Flexural and Axial Compressive Resistance of Noncomposite Longitudinally Stiffened Rectangular Welded Steel Box Section Members

  Ajinkya M. Lokhande and Donald W. White, Georgia Institute of Technology, Atlanta, GA; Charles M. King, COWI North America, North Vancouver, BC, Canada; Michael A. Grubb, M.A. Grubb & Associates, LLC, Wexford, PA

- Lateral-Torsional Buckling Response of Welded-Wide Flange Girders

  Xiao Lin Ji, Robert G. Driver and Ali Imanpour, University of Alberta, Edmonton, AB, Canada

Session S2 – STABILITY UNDER SEISMIC LOADING

- Seismic Performance Evaluation of Cold-Formed Steel Framed Shear Walls using In-Frame Corrugated Steel Sheets

  Xing Lan, Mako Steel, Inc., Carlsbad, CA; Cheng Yu, University of North Texas, Denton, TX; Wenying Zhang, Tongji University, Shanghai, China; Mahsa Mahdavian, Verco Decking, Fremont, CA

- Seismic Performance Assessment of Steel Multi-Tiered Ordinary Concentrically-Braced Frames

  Aradhana Agarwal and Larry A. Fahnestock, University of Illinois at Urbana-Champaign, Urbana, IL

- Evaluation of Seismic Design Methods for Steel Multi-Tiered Special Concentrically Braced Frames

  Pablo A. Cano and Ali Imanpour, University of Alberta, Edmonton, AB, Canada

Session S3 – STABILITY OF FLEXURAL MEMBERS

- Strength Requirements for Shear Diaphragms Used for Stability Bracing of Steel Beams

  O. Ozgur Egilmez, Yasar University, Izmir, Turkey and Mustafa Vardaroglu, University of Campania Luigi Vanvitelli, Caserta, Italy

- Development of a Computational Model to Estimate the Rollover Resistance of Open Web Steel Joist Seats

  Jean C. Batista Abreu and Ronald D. Ziemian, Bucknell University, Lewisburg, PA

- Parametric Study of Hole Pattern Influence on Average Bending Stiffness

  Bob Glauz, RSG Software, Inc., Lee's Summit, MO

Session S4 – PRESENTATION SESSION FOR BEEDLE AND MCGUIRE AWARDS

- Beedle Award Presentation: Looking Back at a Career Shaped by SSRC: Stimulating Stability Research Challenges

  Dinar Camotim, University of Lisbon, Lisbon, Portugal

- MAJR Medal Presentation: Ten Years of Research on Stability of Thin-Walled Members Revisited

  Rodrigo Gonçalves, NOVA University Lisbon, Lisbon, Portugal

Session S5 – SPECIAL TOPICS IN STRUCTURAL STABILITY

- A Reappraisal of the Reliability of Local Buckling Rules Based on the Winter Curve

  Andreas Taras, Bundeswehr University Munich, Neubiberg, Germany; Nicole Schillo, Ingenieurgruppe Bauen, Karlsruhe, Germany

- Tests on Bolted Steel Angles in Compression with Varying End Support Conditions

  Markus Kettler, Gerit Lichtl and Harald Unterweger, Graz University of Technology, Graz, Austria

- Cyclic Fracture Simulation Framework for Stability and Collapse Simulation in Steel Structures

  David A. Padilla-Llano and Jerome F. Hajjar, Northeastern University, Boston, MA; Matthew R. Eatherton and W. Samuel Easterling, Virginia Polytechnic Institute and State University, Blacksburg, VA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD

Session S6 – STABILITY DURING CONSTRUCTION

- Stability Considerations for Concrete Forming Support Systems

  Cliff D. Bishop and Morgan Griffith, Exponent, Inc., Menlo Park, CA; William Trono, Exponent, Inc., Oakland, CA

- Interaction Between Patch Loading, Bending, and Shear in Steel Girder Bridges Erected with the Incremental Launching Method

  Telmo Andrés Sánchez and Andrés F. Robalino, ADSTREN, Quito, Ecuador; Carlos Graciano, Universidad Nacional de Colombia, Medellín, Colombia

- Load Tests of Common Shoring Towers: Typical Detailing and Resulting Capacity Reduction

  Aaron K. Larosche, Randall W. Poston and Keaton Munsterman, Pivot Engineers, Austin, TX; Stalin Armijos M., Michael D. Engelhardt and Todd A. Helwig, University of Texas at Austin, Austin, TX

- Stability of Steel Modules During Construction

  Soheil Shafaei, April Wang and Amit Varma, Purdue University, West Lafayette, IN; Brian Morgen, Magnusson Klemencic Associates, Seattle, WA

Session S7 – STABILITY OF THIN-WALLED MEMBERS

- Direct Strength Approach to Predict the Flexural Strength of Cold-Formed Z-Section Purlins on Slope Roofs

  Ali Parva and Michael W. Seek, Old Dominion University, Norfolk, VA

- Signature Curve for General Thin-Walled Members

  Sandor Ádány, Budapest University of Technology and Economics, Budapest, Hungary

- Modal Interaction in Design of Improved Stiffened Trapezoidal Profiled Sheeting: Shape Grammar, Elastic Stability and Strength Analysis

  Juarez M.S. Franco, Federal Rural University of Rio de Janeiro, Seropédica, Brazil; João P.M. Garcia and Eduardo M. Batista, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

Session S8 – STABILITY OF LATERAL SYSTEMS

- Modeling the Influence of Residual Stress on the Ultimate Load Conditions of Steel Frames

  Barry T. Rosson, Florida Atlantic University, Boca Raton, FL

- A Partial-Distributed Damage Method for Progressive Collapse of 3D Steel Composite Buildings

  Fani Derveni, Panos Pantidis, Simos Gerasimidis and Kara D. Peterman, University of Massachusetts Amherst, Amherst, MA

- Shear Resistance Mechanisms of Steel Sheet Walls with Burring Holes and the Effect of Wall Widths with Vertical Slits

  Yoshimichi Kawai and Shigeaki Tohnai, Nippon Steel & Sumitomo Metal Corporation, Tokyo, Japan; Kazunori Fujihashi, NS Hi-Parts Corporation, Tokyo, Japan; Atsushi Sato and Tetsuro Ono, Nagoya Institute of Technology, Nagoya, Aichi Prefecture, Japan

Session S9 – ADVANCES IN THE DIRECT STRENGTH METHOD

- On the Accuracy of the Current Direct Strength Method (DSM) Design Curve for Columns Failing in Global Modes

  Pedro B. Dinis, Dinar Camotim and André D. Martins, University of Lisbon, Lisbon, Portugal

- Distortional Failure and DSM Design of Cold-Formed Steel Lipped Channel Beams under Non-Uniform Bending

  Isis Cler Depolli and Alexandre Landesmann, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; Dinar Camotim and André Dias Martins, University of Lisbon, Lisbon, Portugal

- Direct Strength Prediction of Cold-Formed Z-Section Purlins with Support Torsion Braces Combined with Span Lateral Braces

  Michael W. Seek and Ali Parva, Old Dominion University, Norfolk, VA

Session S10 – STABILITY OF CONNECTIONS AND ASSEMBLAGES

- Warping and Deformations in Profiled Steel Deck under Shear

  Astrid Winther Fischer and Benjamin William Schafer, Johns Hopkins University, Baltimore, MD; Guanbo Bian, Fannie Mae, Washington, DC

- Stability of Wall-Diaphragm Connections in Cold-Formed Steel Framed Buildings

  Hernan Castaneda and Kara D. Peterman, University of Massachusetts Amherst, Amherst, MA; Deniz Ayhan and Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD

- The Impact of Gravity Connections on the Progressive Collapse Response of Steel-Framed and Concrete Composite Buildings

  Panos Pantidis, Thomas Hill, and Simos Gerasimidis, University of Massachusetts Amherst, Amherst, MA

Session S11 – STABILITY AT ELEVATED TEMPERATURES

- Application of the Direct Strength Method to Functionally-Graded-Material-Sheathed Cold-Formed Steel Beam Channel Members under Non-Uniform Elevated Temperature

  Elias Y. Ali and Yared Shifferaw, Drexel University, Philadelphia, PA

- Stability of Steel Structures at Elevated Temperatures: A Hybrid Fire Testing Approach

  Ana Sauca, Chao Zhang and Mina Seif, National Institute of Standards and Technology, Gaithersburg, MD

- Modal Identification of Thin-Walled Steel Studs under Non-Uniform Temperature

  Jean C. Batista Abreu, Bucknell University, Lewisburg, PA; Zhanjie Li, SUNY Polytechnic Institute, Utica, NY

- Creep Buckling of Steel Beam-Columns Subjected to Fire

  Ali Morovat, Michael D. Engelhardt and Todd A. Helwig, University of Texas at Austin, Austin, TX

Session S12 – STABILITY OF TUBULAR SECTIONS

- Numerical and Experimental Studies for the Development of Direct Strength Design Rules for Locally and Globally Slender Hollow Sections

  Andrea Toffolon and Andreas Taras, Bundeswehr University Munich, Neubiberg, Germany

- Determination of the Buckling Critical Load for Composite Concrete-Filled Steel Tube Columns from Partial Experimental Data: A Review of the Southwell Plot Technique

  Tiziano Perea, Universidad Autónoma Metropolitana Azcapotzalco, Mexico City, Mexico; Roberto T. Leon, Virginia Polytechnic Institute and State University, Blacksburg, VA; Mark D. Denavit, University of Tennessee, Knoxville, TN; Jerome F. Hajjar, Northeastern University, Boston, MA

Session S13 – RESIDUAL STRESS AND IMPERFECTION EFFECTS ON STABILITY

- Using Photogrammetry-Based Imperfection Measurement Tools to Determine the Impact of Corner Radii Imperfection on Cold-Formed Steel Member Strength

  Abbas Joorabchian and Kara D. Peterman, University of Massachusetts Amherst, Amherst, MA

- Geometric Imperfection Models in Shell Finite Element Models of CFS Members—A Review of Current State of Practice

  Shafee Farzanian, Arghavan Louhghalam and Mazdak Tootkaboni, University of Massachusetts Dartmouth, North Dartmouth, MA; Benjamin W. Schafer, Johns Hopkins University, Baltimore, MD

- The Influence of Geometrical and Material Imperfections on the Stability and Resistance of I and H Sections

Lucile Gérard, Caroline Arsenault and Nicolas Boissonnade, Université Laval, Québec City, QC, Canada; Markus Kettler, Graz University of Technology, Graz, Austria

- Modeling Out-of-Flatness and Residual Stresses in Steel Plate Girders

  Mahdi Asadnia and W.M. Kim Roddis, The George Washington University, Washington, DC

SSRC PAPER IN THE AISC SESSION

- Column Design: Past, Present, Future

  Joseph A. Yura, University of Texas at Austin, Austin, TX