



Professor Donald W. White

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School of Civil and Environmental Engineering (CEE)
Georgia Tech

Biography:

He has been a member of the CEE faculty at Georgia Tech since 1997. Prior to joining Georgia Tech, Dr. White served on the faculty at the Purdue University School of Civil Engineering from 1987 to 1996. He received his doctorate in Structural Engineering from Cornell University in 1988, and is an alumnus of North Carolina State University. Prior to graduate study, Dr. White worked as a structural engineer in Raleigh, NC.

Dr. White’s research covers a broad area of design and behavior of steel and composite steel-concrete structures as well as computational mechanics, methods of nonlinear analysis and applications to design. Dr. White is a member of the AISC Technical Committees 4, Member Design, and 10, Loads, Analysis and Stability, the AISI Bridge Design Advisory Group, the AISC Specification Committee, and several AASHTO/NSBA Steel Bridge Collaboration Task Groups. He is past Chair of the SSRC Task Group 29, Second-Order Inelastic Analysis of Frames and currently serves on the Executive Committee of the SSRC.

Dr. White has served as a major contributor to the steel design and structural analysis sections of the AASHTO LRFD Bridge Design Specifications and the ANSI/AISC Specification for Structural Steel Buildings during the

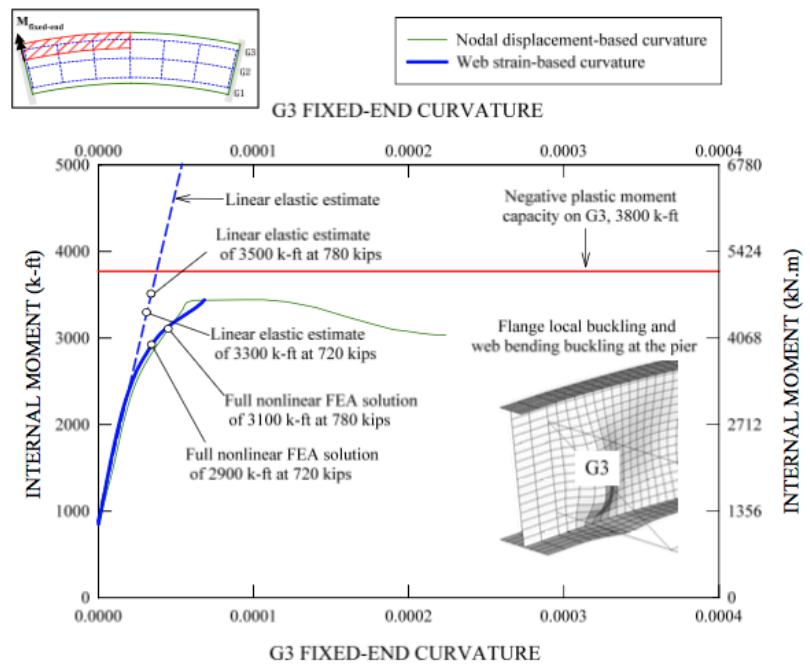


Fig. 8 – G3 fixed-end moment versus corresponding curvature due to the applied loads, initial dead load moment included.

From: Jung, S.-K. and White, D.W. [2006]. “Strength Behavior of Horizontally Curved Composite I- Girder Bridge Structural Systems,” Proceedings, Annual Technical Session, Structural Stability Research Council, San Antonio, TX, 143-162.

past 20 years. He was a lead author on the 1997 ASCE publication Effective Length and Notional Load Approaches for Assessing Frame Stability: Implications for American Steel Design, which was a precursor of the development of the AISC Direct analysis Method of design, referred to as the DM. Furthermore, Dr. White was a major participant ad hoc task group efforts leading to the development of the DM, which is the preferred method of stability design in the AISC Specification for Design of Steel Building Structures. Subsequent to these developments, the Metal Building Manufacturers Association (MBMA) provided White the opportunity to extend a number of these developments to updated procedures for design of frames using web-tapered members, which is captured within the AISC/MBMA Design Guide 25. Dr. White received the 2005 Special Achievement Award and the 2009 T.R. Higgins lectureship award from AISC for his research on design criteria for steel and composite steel-concrete members in bridge and building construction. He received the 2006 Shortridge Hardesty Award from ASCE for his research on advanced frame stability concepts and practical design formulations. For efforts leading to the comprehensive update to the 2005 AASHTO LRFD provisions for steel I- and box-girder bridge design, and unification of AASHTO LRFD provisions for straight and curved girder bridge design, White received the 2007 Richard S. Fountain Bridge Task Force Award and, with M. Grubb and W. Wright, the 2006 Richardson Medal from the Engineers' Society of Western Pennsylvania. Dr. White has conducted research on a wide range of topics relating to stability analysis and design and construction engineering of steel bridge structures. This includes work on construction simulation of curved and skewed steel bridges, investigation of the behavior of thin-web girders, and stability of components and structural systems during construction and in their final constructed condition. He was one of several researchers privileged to be involved closely with curved steel bridge experimental testing at the FHWA Turner Fairbank Highway Research Center from 1997 through 2005. Dr. White was P.I. and lead author of the NCHRP Report 725, Guidelines for Analytical Methods and Construction Engineering of Curved and Skewed Steel Girder Bridges. This work contributed additional substantive advances to the state-of-the-art in the engineering of curved and skewed steel girder bridge structures. Dr. White is currently P.I. on a multi-year FHWA-sponsored effort with the goal of modernizing the AASHTO LRFD provisions pertaining to all types of noncomposite box-section members including truss members, edge girders in cable-stayed spans, arch ribs, arch ties, and tower legs.

Beyond his direct contributions as part of the development of the current AASHTO and AISC Specifications, Dr. White has actively introduced the results of his research to practice. He is a co-author of the AISC Design Guide 28, Stability Design of Steel Buildings, as well as the Metal Building Manufacturers Association (MBMA) and AISC Design Guide 25, Frame Design Using Web-Tapered Members. These documents provide extensive guidelines for the engineering of steel building structural systems. In addition, he is author of Volume 4 of the NSBA Steel Bridge Design Handbook, Structural Behavior of Steel, which provides an extensive overview of the background to the AASHTO LRFD provisions for steel design.

Education:

Ph.D., Structural Engineering, Cornell University, 1988.

M.S., Structural Engineering, Cornell University, 1985.

B.S., Civil Engineering, North Carolina State University, 1982.

Research Interests:

Computational mechanics, Numerical methods, structural stability, Steel structures, Computer-aided engineering

Selected Honors & Awards:

- Leadership in the use of Technology Award, School of Civil and Environmental Engineering, Georgia Tech, 2013.
- Raymond C. Reese Research Prize, 2010, American Society of Civil Engineers.
- T. R. Higgins Lectureship Award, 2009, American Institute of Steel Construction.
- Shortridge Hardesty Award, 2006, American Society of Civil Engineers
- George S. Richardson Medal, 2006, Engineers Society of Western Pennsylvania International Bridge Conference
- American Institute of Steel Construction 2005 Special Achievement Award.

Selected Publications:

- White DW, Abel JF. Accurate and efficient nonlinear formulation of a nine-node shell element with spurious mode control. *Computers and Structures* 1990; 35(6):621-641.
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- D.W. White, S.-K. Jung, Unified flexural resistance equations for stability design of steel I-section members – uniform bending tests, *Structural Engineering, Mechanics and Materials Report No. 28*, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA (2004). Also see article in *ASCE Journal of Structural Engineering*, September 2008
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- D. Linzell, D. Hall, D. White, "Historical perspective on horizontally curved I girder bridge design in the United States", *J. Bridg. Eng.*, 9 (3) (2004), pp. 208-229
- D.W. White and M.A. Grubb, "Comprehensive update to AASHTO LRFD provisions for flexural design of

bridge I-girders, (publisher not identified in the pdf file), <https://www.researchgate.net/publication/237514425>

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