



Professor Chai H. Yoo (1939-2017) Stability of Structures, Principles and Applications, Elsevier, Yoo, C.H., and Lee, S.C., 523 pages, ISBN 978-0-12-385122-2, 2011.

See:

<http://www.eng.auburn.edu/enewsletter/june-2008/faculty/yoo.html>

<http://etd.auburn.edu/browse?value=Yoo%2C+Chai+H.&type=author>

Professor Emeritus, Civil Engineering Dept., Auburn University, Alabama; P.E., Fellow of the ASCE.

Obituary (From: http://www.oanow.com/obituaries/yoo-ph-d-p-e-f-asce-chai-hong/article_46e56b99-27e4-53cb-ac6d-f4421b8af7cd.html):

September 16, 1939-July 12, 2017. Chai Hong "Jay" Yoo, of Auburn, died peacefully of lung cancer on July 12, 2017, at Bethany House at age 77. He was a beloved husband, father, grandfather, and professor emeritus of Auburn University. Originally from Choongjoo, South Korea, Dr. Yoo's early childhood was interrupted by the Korean War. Despite educational disruptions, he tested into the KyungBok High School, where he was senior class president and captain of the weight-lifting team. Dr. Yoo received full scholarship funding to graduate from Seoul National University, the most prestigious university in Korea. After serving as a civil engineering officer in the Republic of Korea Air Force, he moved to Vietnam as a civilian civil engineer. He then moved to the United States in 1967 to complete his studies. He received his Ph.D. in Civil Engineering from the University of Maryland, where he also did post-graduate work in his specialty of structural engineering. He passionately believed that he should use his education to give back to his global community, and he worked arduously to achieve his goal.

Dr. Yoo taught at Marquette University in Milwaukee, WI, prior to moving to Auburn in 1981. At Auburn, he achieved tenure in two years and was promoted to full professor in 1986. He was named the Huff Eminent Scholar of the College of Engineering in 1998. After retirement from Auburn University, Dr. Yoo was an Invited Professor in the Department of Architectural, Civil and Environmental Engineering at Korea University in Seoul, Korea, where he won an Outstanding Teacher Award in 2007. In 2008, Dr. Yoo earned a national award from the American Society for Civil Engineers (ASCE), the Shortridge Hardesty Award for outstanding research and practical engineering efforts dealing with the strength and stability of thin-walled sections, especially as applied to bridge girders.

Dr. Yoo was the principal investigator and project director of National Cooperative Highway Research

Program Project 12-38 that produced the American Association of State Highway and Transportation Officials' Guide Specifications for Horizontally Curved Steel Girder Highway Bridges with Design Examples for I-girder and Box-Girder Bridges. Dr. Yoo co-wrote two books: "Analysis and Design of Curved Steel Bridges" (1988) with Hiroshi Nakai of Japan and "Stability of Structures: Principles and Applications" (2011) with Sung C. Lee of Korea. He authored over 80 peer-reviewed journal papers and was active on numerous ASCE and Structural Stability Research Council technical committee activities. Dr. Yoo was an avid golfer and could often be found on the green for the first available tee-time. A copy of Ben Hogan's "Modern Fundamentals of Golf" could always be found next to his chair. His greatest fear was to lose his mental acuity, so he played Sudoku daily. He remained sharp until the last days of his life, and died on his own terms in hospice care.

Education:

B.S. 1962 Seoul National University
M.S. 1969 University of Maryland
Ph.D. 1971 University of Maryland

Experience:

1962-66 Civil Engineer Officer (1st Lt., ROKAF), Korean Air Force, Seoul, Korea
1966-67 Structural Engineer, Pacific Architects and Engineers, Inc., Saigon, Vietnam
1968-71 Graduate Research Assistant, Department of Civil Engineering, University of Maryland, College Park, Maryland
1971-72 Structural Engineer, McGaughy, Marshall and McMillan Assoc., Norfolk, Virginia
1972-73 Faculty Research Associate, Department of Civil Engineering, University of Maryland, College Park, Maryland
1973-74 Visiting Assistant Professor, Department of Civil Engineering, University of Maryland, College Park, Maryland
1975-80 Assistant Professor, Department of Civil Engineering, Marquette University, Milwaukee, Wisconsin
1980-81 Associate Professor, Department of Civil Engineering, Marquette University, Milwaukee, Wisconsin (tenured)
1981-84 Associate Professor, Department of Civil Engineering, Auburn University, Auburn, Alabama 1983 Tenured
1986 Promoted to Full Professor
1984-90 Gottlieb Associate Professor/Gottlieb Professor, Department of Civil Engineering, Auburn University, Auburn, Alabama
1990-96 Professor, Department of Civil Engineering, Auburn University, Auburn, Alabama
1996-97/1998-02, Gottlieb Professor/Huff Eminent Scholar, Department of Civil Engineering, Auburn University, Auburn, Alabama
2003-07 Professor, Department of Civil Engineering, Auburn University, Auburn, Alabama
2007-08 Invited Professor, Department of Architectural, Civil and Environmental Engineering, Korea University, Seoul, Korea
2007-present, Professor Emeritus, Department of Civil Engineering, Auburn University, Auburn, Alabama

Research Grants and Contracts:

National Science Foundation – 2 Projects
NASA – 2 Projects
American Iron and Steel Institute – 1 Project

National Corporative Highway Research Program – 1 Project
Federal Highway administration – 1 Project
Alabama Department of Transportation – 5 Projects
Maryland Department of Transportation – 2 Projects

Professional Societies:

Fellow Member, American Society of Civil Engineers; Charter Member, Engineering Mechanics Institute, American Society of Civil Engineers; Overseas Member, The National Academy of Engineering of Korea; Honorary Member, Structural Stability Research Council, Chairman (1981-1987), Task Group #14, Horizontally Curved Girders, Structural Stability Research Council; Chairman (1980-1984), member (1980-1988), Committee on Flexural Members, ASCE, Member (1981-1983); Task Committee on Redundancy of Flexural Systems, ASCE, Member (1985-1987); Committee on Timber Bridges, ASCE; Member (1982-1985), Committee on Transportation Lifelines; ASCE, Member (1985-1987), Committee on Special Structures, ASCE; Member, Publications Committee, ASCE Technical Council on Computer Practices; Chairman (1998-2000), Committee on Stability, ASCE, Assoc Editor (1998-2000), Journal of Engineering Mechanics, ASCE; member, Korea Society of Civil Engineers; Honorary Member, Korean Scientists and Engineers Assoc., in America, Inc.

Honors and Distinctions:

Registered Professional Engineer: Virginia #06424, Alabama #14447; Chi Epsilon; Tau Beta Pi; Sigma Xi; Doctoral Dissertation Fellowship, University of Maryland, 1971; NASA-ASEE Faculty Research Fellowship, Summer 1978; Lincoln Arc Welding Foundation Award, 1978 (4th place), 1982 (honorable mention); 1985 NASA New Technology Award (MFS 27078)

Invited in 1988 as one of four national speakers at the year-long mechanics seminar series at Georgia Institute of Technology commemorating sesquicentennial celebration

Selected in 1996 as one of three outstanding educators in the U.S.A. by American Iron and Steel Institute with graduate fellowship fund for pioneering contributions to steel bridge research and education

Panel Reviewer, Undergraduate Research Participation Program, National Science Foundation, 1978, 1979
Member, International Editorial Board, International Journal of Steel Structures; International Journal of Mechanics and Solids

Reviewer, Applied Mechanics; Journal of Engineering Mechanics, ASCE; Journal of Structural Engineering, ASCE; International Journal of Solids and Structures; International Journal for Numerical Methods in Engineering; Computers and Structures; Structural Stability Research Council; Journal of Computing in Civil Engineering; Journal of Sound and Vibration; International Journal of Constructional Steel Research

Recipient of 2008 ASCE Shortridge Hardesty Award

Recipient of the Korea University Outstanding Teaching Award, Fall Semester 2007

Books and Book Chapters:

Stability of Structures, Principles and Applications, Elsevier, Yoo, C.H., and Lee, S.C., 523 pages, ISBN 978-0-12-385122-2, 2011.

Analysis and Design of Curved Steel Bridges, McGraw-Hill Book Company, Nakai, H. and Yoo, C.H., 673 pages, ISBN 0-07-045866-9, 1988.

Chapter 9 Stability of Horizontally Curved Beams, SSRC Guide to Stability Design Criteria for Metal Structures, 6th Edition, R.D. Ziemian, Editor, Wiley-Interscience, ISBN 978-0-470-08525-7, 2010.

AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (2003) with Design Examples for I-Girder and Box-Girder Bridges, American Association of State Highway and Transportation Officials, Inc. Washington, DC., Hall, D.H. and Yoo, C.H., ISBN 1-56051-165-6 (NCHRP Project 12-38 Final Report).

Selected Journal Publications:

Yoo, C.H., Kang, J., and Kim, K., "Stresses Due to Distortion on Horizontally Curved Tub-girders," Engineering Structures, Elsevier, Vol. 87, March 2015, pp. 70-85.

Lee, S.C., Lee, D.S., and Yoo, C.H., "Design of Intermediate Transverse Stiffeners for Shear Web Panel," Engineering Structures, Elsevier, Vol. 75, September 2014, pp. 27-38.

Lee, K.C., Kang, J., and Yoo, C.H., "Stiffness Requirements for Transverse Stiffeners of Rectangular CFT Compression Panels," Int. J. Steel Structures, 13(2), June 2013, pp. 265-274.

Lee, S.C., Lee, D.S., and Yoo, C.H., "Flexure and Shear Interaction in Steel Girders," Journal of Structural Engineering, ASCE, 139(11), November 2013, pp. 1882-1894.

Lee, K.C., and Yoo, C.H., "Longitudinal Stiffeners in Concrete-Filled Tubes," Journal of Structural Engineering, ASCE, Vol. 138, No.6, June 2012, pp. 753-758.

Yoo, C.H., Kang, J., Kim, K., and Lee K.C., "Shear flow in thin-walled cellular sections," Thin-Walled Structures, Elsevier, Vol. 49 Issue 10, 2011, pp. 1341-1347.

Kim, K., and Yoo, C.H., "Bending Behavior of Quasi-Closed Trapezoidal Box Girders with X-Type Internal Cross-Frames," Journal of Constructional Steel Research, Elsevier, Vol. 65, Nos. 8-9, 2009, pp. 1827-1835.

Lee, S.C., Lee, D.S., and Yoo, C.H., "Further Insight into Postbuckling of Web Panels, I: Review of Flange Anchoring Mechanism," Journal of Structural Engineering, ASCE, Vol. 135, No.1, January 2009, pp. 3-10.

Lee, S.C., Lee, D.S., Park, C.S., and Yoo, C.H., "Further Insight into Postbuckling of Web Panels, II: Experiments and Verification of New Theory," Journal of Structural Engineering, ASCE, Vol. 135, No.1, January 2009, pp. 11-18.

Lee, S.C., Lee, D.S., and Yoo, C.H., "Ultimate Shear Strength of Long Web Panels," Journal of Constructional Steel Research, Elsevier, Vol. 64 (12), December 2008, pp. 1357-1365.

Kang, J., Parker, F., Kang, Y.J., and Yoo, C.H., "Effects of Shearing Forces Acting on Sidewalls of Box Culverts," International Journal for Numerical and Analytical Methods in Geomechanics, Vol. 32, issue 3, February 2008, pp. 289-306.

Choi, B., Kang, Y.J., and Yoo, C.H., "Stiffness Requirements for Transverse Stiffeners of Compression Flange," Engineering Structures, Elsevier, Vol. 29 (9), September 2007, pp. 2087- 2096.

Kim, K., and Yoo, C.H., "Interaction of Top Lateral and Internal Bracing Systems in Tub Girders," Journal of Structural Engineering, ASCE, Vol. 132, No. 10, October 2006, pp. 1611- 1620.

Yoo, C.H., and Lee, S.C., "Mechanics of Web Panel Postbuckling Behavior in Shear," Journal of Structural Engineering, ASCE, Vol. 132, No. 10, October, 2006, pp. 1580-1589.

Kim, K., and Yoo, C.H., "Effects of External Bracing on Horizontally Curved Box Girder Bridges During Construction," Engineering Structures, Elsevier, Vol. 28 (12), October 2006, pp. 1650-1657.

Kim, K., and Yoo, C.H., "Brace Forces in Steel Box Girders with Single Diagonal Bracing System," Journal of Structural Engineering, ASCE, Vol. 132, No. 8, August 2006, pp. 1212- 1222.

Choi, B.H., and Yoo, C.H., "Strength of Stiffened Flanges in Horizontally Curved Box Girders," Journal of Engineering Mechanics, ASCE, Vol. 131, No. 2, February 2005, pp. 167-176.

Lee, S.C., Yoo, C.H., and Yoon, D.Y., "New Design Rule for Intermediate Transverse Stiffeners Attached on Web Panels," *Journal of Structural Engineering*, ASCE, Vol. 129, No. 12, December 2003, pp. 1607-1614.

Davidson, J.S., and Yoo, C.H., "Effects of Distortion on Strength of Curved I-Shaped Bridge Girders," *Journal of the Transportation Research Board*, No. 1845, 2003, pp. 48-56.

Lee, S.C., Yoo, C.H., and Yoon, D.Y., "Analysis of Shear Lag Anomaly in Box Girders," *Journal of Structural Engineering*, ASCE, Vol. 128, No. 11, November 2002, pp. 1379-1386.

Lee, S.C., Yoo, C.H., and Yoon, D.Y., "Behavior of Intermediate Transverse Stiffeners Attached on Web Panels," *Journal of Structural Engineering*, ASCE, Vol. 128, No. 3, March 2002, pp. 337-345.

Yoo, C.H., "Design of Longitudinal Stiffeners on Box Girder Flanges," *International Journal of Steel Structures*, Vol. 1, No. 1, June 2001, pp. 15-23.

Yoo, C.H., Choi, B.H., and Ford, E.M., "Stiffness Requirements for Longitudinally Stiffened Box Girder Flanges," *Journal of Structural Engineering*, ASCE, Vol. 127, No. 6, June 2001, pp. 705-711.

Yoo, C.H., "Torsional and Other Properties of Prestressed Concrete Sections," *PCI Journal*, Vol. 45, No. 3, May - June 2000, pp. 66-72.

Lee, S.C., and Yoo, C.H., "Strength of Curved I-Girder Web Panels Under Pure Shear," *Journal of Structural Engineering*, ASCE, Vol. 125, No. 8, August, 1999, pp. 847-853.

Lee, S.C., and Yoo, C.H., "Strength of Plate Girder Web Panels under Pure Shear," *Journal of Structural Engineering*, ASCE, Vol. 124, No. 2, February, 1998, pp. 184-194.

Yoo, C.H., and Davidson, J.S., "Yield Interaction Equations for Nominal Bending Strength of Curved I Girders," *Journal of Bridge Engineering*, ASCE, Vol. 2, No. 2, May, 1997, pp. 37-44.

Lee, S.C., Davidson, J.S., and Yoo, C.H., "Shear Buckling Coefficients of Plate Girder Web Panels," *Computers and Structures*, Vol. 59, No. 5, pp. 789-795, 1996.

Kang, Y.J., and Yoo, C.H., "Thin-walled Curved Beams: Part I-Formulation of Nonlinear Equations," *Journal of Engineering Mechanics*, ASCE, Vol. 120, No. 10, October 1994, pp. 2072-2101.

Kang, Y.J., and Yoo, C.H., "Thin-walled Curved Beams: Part II-Analytical Solutions for Buckling of Arches," *Journal of Engineering Mechanics*, ASCE, Vol. 120, No. 10, October 1994, pp. 2102-2125.

Kang, Y.J., Lee, S.C., and Yoo, C.H., "On the Dispute Concerning the Validity of the Wagner Hypothesis," *Computers and Structures*, Pergamon Press, Vol. 43, No. 5, 1992, pp. 853-861.

Davidson, J.S., and Yoo, C.H., "Effect of Vertical Support Vibration on Highway Bridge Superstructures," *Computers and Structures*, Pergamon Press, Vol.40, No. 4, 1991, pp. 947-955.

Lee, S.C., and Yoo, C.H., "A Novel Shell Element Including Inplane Torque Effects," *Computers and Structures*, Pergamon Press, Vol. 28, No. 4, 1988, pp. 505-522.

Yoo, C.H., "A Consistent Discrete Elements Technique for Curved Members," *Computers and Structures*, Pergamon Press, Vol. 25, No. 1, 1987, pp. 137-146.

Yoo, C.H., and Acra, S.V., "Cross Sectional Properties of Thin-Walled Multi-Cellular Section," *Computers and Structures*, Pergamon Press, Vol. 22, No. 1, January 1986, pp. 53-61.

Yoo, C.H., Kao, J.S., and Shiu, Y.T., "Behavior of Circular Plates of Rectangular Orthotropy," *Civil Engineering for Practicing and Design Engineers*, Pergamon Press, An International Journal, Vol. 3, No. 7, July 1984, pp. 645-664.

Yoo, C.H., and Pfeiffer, P.A., "Buckling of Curved Beams with In-Plane Deformation," *Journal of Structural Engineering*, ASCE, Vol. 110, No. 2, February 1984, pp. 291-300.

Yoo, C.H., and Pfeiffer, P.A., "Elastic Stability of Curved Members," *Journal of Structural Engineering*, ASCE, Vol. 109, No. 12, December 1983, pp. 2922-2940.

Yoo, C.H., "Flexural-Torsional Stability of Curved Beams," *Journal of the Engineering Mechanics Division*, ASCE, Vol. 108, No. EM6, December 1982, pp. 1351-1369.

Yoo, C.H., and Polka, J.E., "Analysis and Design of Non-Prismatic Circular Tanks on Elastic Foundations," *An*

International Journal, Civil Engineering for Practicing and Design Engineers, Pergamon Press, Vol. 1, 1982, pp. 187-208.

Yoo, C.H., and Fehrenbach, J.P., "Natural Frequencies of Curved Girder," Journal of the Engineering Mechanics Div., ASCE, Vol. 107, No. EM2, April 1981, pp. 339-354.

Yoo, C.H., "Bimoment Contribution to Stability of Thin-Walled Assemblages," Computers and Structures, Vol. 11, No. 5, May 1980, pp. 465-471.

Yoo, C.H., "Matrix Formulation of Curved Girder," Journal of the Engineering Mechanics Div., ASCE, Vol. 105, No. EM6, December 1979, pp. 971-988.

Yoo, C.H., "Optimization of Triangular Laced Truss Columns with Tubular Compression Members for Space Application," American Institute of Aeronautics and Astronautics Journal, Vol. 17, No. 8, August 1979, pp. 921-924.

Yoo, C.H., Evick, D., and Heins, C.P., "Non-Prismatic Curved Girder Analysis," Computers and Structures, Pergamon Press, Vol. 4, February 1974, pp. 675-698.

Yoo, C.H., and Heins, C.P., "Plastic Collapse of Horizontally Curved Bridge Girders," Journal of the Structural Div., ASCE, Vol. 98, No. ST4, April 1972, pp. 899-914.