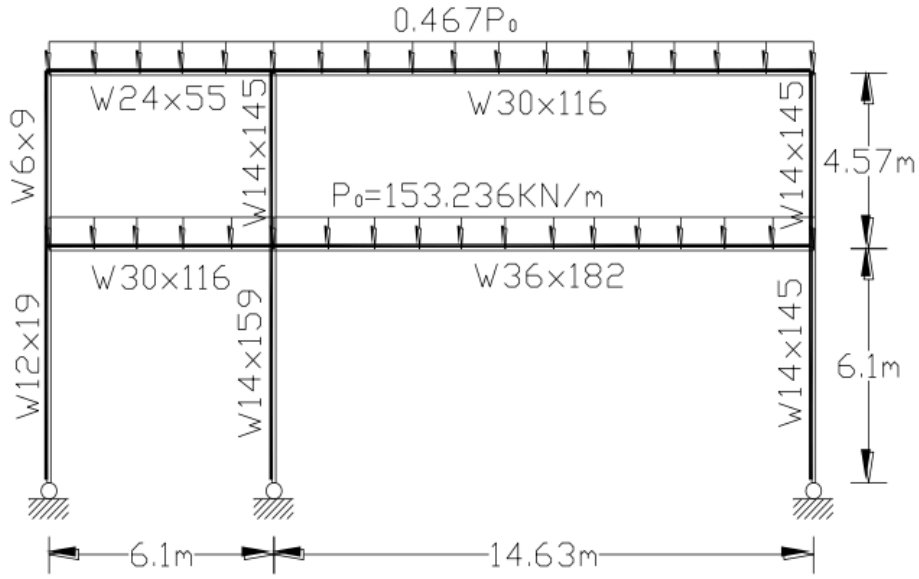
Professor Hao Zhang



From: Zhang, H., Shayan, S., Rasmussen, K., Ellingwood, B. (2016). System-based design of planar steel frames, I: Reliability framework. Journal of Constructional Steel Research, 123, 135-143

See:
http://sydney.edu.au/engineering/people/hao.zhang.php
https://pdfs.semanticscholar.org/878a/89ea684af1bd725a443f80c033fa877a57fb.pdf

Centre for Advanced Structural Engineering, School of Civil Engineering
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Biography/Autobiography:
Earthquakes, cyclones, floods and tsunamis are events of low probability but high consequences. Associate Professor Hao Zhang's research looks at the frequency and magnitude of such events, and at their effects on structures such as buildings and bridges, with the aim of increasing safety by improving design. Hao Zhang writes: "We cannot eliminate earthquakes, cyclones and so on. They will happen. But in terms of our structures, we can be prepared. It's not possible to design a structure that is absolutely safe - one that will never fail - but we can certainly mitigate the risks so that, for example, if a major earthquake does occur, the people inside will be able to get out. I always wanted to be a structural engineer. My parents were both mechanical engineers, so I was familiar with engineering generally, but as a kid I decided I wanted to build something big, so I went into civil engineering! I worked in industry before entering academia, which means I appreciate the challenges and responsibilities of being a civil engineer. I wanted to gain this experience before becoming a researcher. Otherwise I felt that I would be doing research into, for example, building better bridges but would never have designed one myself. I joined the University of Sydney in 2008, and am very happy to have moved here. I can choose what I want to research, and the School of Civil Engineering provides me with a lot of support, including funding, student resources and opportunities to collaborate with colleagues and industry. I really enjoy working in this environment."

Education:
PhD from Georgia Institute of Technology

Selected Publications:

Li, Q., Zou, A., Zhang, H. (2016). A simplified method for stability analysis of multi-story frames considering vertical interactions between stories. Advances in Structural Engineering, 19(4), 599-610.

Rasmussen, K., Zhang, X., Zhang, H. (2016). Beam-element-based analysis of locally and/or distortionally buckled members: Theory. Thin-Walled Structures, 98, 285-292

Zhang, X., Rasmussen, K., Zhang, H. (2016). Experimental investigation of locally and distortionally buckled portal frames. Journal of Constructional Steel Research, 122, 571-583.

Chen, G., Zhang, H., Rasmussen, K., Fan, F. (2016). Modeling geometric imperfections for reticulated shell structures using random field theory. Engineering Structures, 126, 481-489

Zhang, X., Rasmussen, K., Zhang, H. (2016). Second-order effects in locally and/or distortionally buckled frames and design based on beam element analysis. Journal of Constructional Steel Research, 122, 57-69

Zhang, H., Shayan, S., Rasmussen, K., Ellingwood, B. (2016). System-based design of planar steel frames, I: Reliability framework. Journal of Constructional Steel Research, 123, 135-143

Zhang, H., Shayan, S., Rasmussen, K., Ellingwood, B. (2016). System-based design of planar steel frames, II: Reliability results and design recommendations. Journal of Constructional Steel Research, 123, 154-161

Zhang, X., Rasmussen, K., Zhang, H. (2015). Beam-element-based analysis of locally and/or distortionally buckled members: Application. Thin-Walled Structures, 95, 127-137

Ma, H., Fan, F., Wen, P., Zhang, H., Shen, S. (2015). Experimental and numerical studies on a single-layer cylindrical reticulated shell with semi-rigid joints. Thin-Walled Structures, 86, 1-9

Yang, N., Zhong, Y., Meng, Q., Zhang, H. (2014). Hysteretic behaviors of cold-formed steel beam-columns with hollow rectangular section: Experimental and numerical simulations. Thin-Walled Structures, 80, 217-230

Chen, G., Zhang, H., Rasmussen, K., Fan, F. (2014). Modelling Geometric Imperfections of Spatial Latticed Structures Considering Correlations of Node Imperfections. 1st Australasian Conference on Computational Mechanics, Sydney: Trans Tech Publications.

Shayan, S., Rasmussen, K., Zhang, H. (2014). On the modelling of initial geometric imperfections of steel frames in advanced analysis. Journal of Constructional Steel Research, 98, 167-177.

Zhang, H., Rasmussen, K., Ellingwood, B. (2014). Reliabilities of Steel Structural Systems Designed by Inelastic Analysis. Second International Conference on Vulnerability and Risk Analysis and Management (ICVRAM) and the Sixth International Symposium on Uncertainty Modeling and Analysis (ISUMA), Reston, Virginia: American Society of Civil Engineers (ASCE)

Zhang, H., Ellingwood, B., Rasmussen, K. (2014). System reliabilities in steel structural frame design by inelastic analysis. Engineering Structures, 81, 341-348

Zhang, H. (2013). Structural reliability analysis with imprecise probability using interval importance sampling method. 11th International Conference on Structural Safety & Reliability (ICOSSAR) 2013, Leiden, The Netherlands: CRC Press.

Zhang, H., Rasmussen, K. (2013). System-based design for steel scaffold structures using advanced analysis. Journal of Constructional Steel Research, 89, 1-8.

Zhang, X., Rasmussen, K., Zhang, H. (2012). Beam-Element-Based Analyses of Locally and Distortionally Buckled Columns. 7th International Conference on Advances in Steel Structures (ICASS 2012), Nanjing: Southeast University Press.

Shayan, S., Rasmussen, K., Zhang, H. (2012). On the Modelling if Geometric Imperfections of Steel Structural Members and Frames. 7th International Conference on Advances in Steel Structures (ICASS 2012), Nanjing: Southeast University Press.

Zhang, H., Rasmussen, K. (2012). System-Based Design of Steel Scaffolding Structures Using Advanced Analysis. 7th International Conference on Advances in Steel Structures (ICASS 2012), Nanjing: Southeast University Press.
Zhang, H., Muhanna, R. (2010). Interval estimate of structural reliability. The 10th International Conference on Structural Safety and Reliability, London, UK: CRC Press.
Zhang, H., Chandrangsu, T., Rasmussen, K. (2009). System Reliability of Steel Scaffold Systems. Sixth International Conference on Advances in Steel Structures, Hong Kong: Hong Kong Institute of Steel Construction.
Zhang, H., Muhanna, R., Mullen, R. (2005). Finite Element Analysis for Uncertain Structures: An Interval Approach. 9th International Conference on Structural Safety and Reliability (ICOSSAR '05), Rotterdam, The Netherlands: Millpress.