

G. D. Hahn

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Education

- Ph.D., Civil Engineering, Rice University, 1986
- M.S., Civil Engineering, Rice University, 1984
- Civil Engineer Degree, University of Santo Domingo, 1978

Career Interests

- Education, research, and consulting practice in structural engineering
- Application of classical and modern computer-based methods of structural analysis and design with proper appreciation for physical behavior
- Development of improved understandings of structural behavior through research in structural dynamics and structural stability with attention for a sustainable infrastructure
- Study of seismic ground motions and soil-structure interaction, wave forces and fluid-structure interaction, thermo-mechanical behavior of high-temperature/high-pressure subsea pipelines
- Evaluation of structural readiness for strength and fatigue
- Use of effective engineering skills for problem identification, framing, and resolution
- Promotion of coherent team work and multidisciplinary undertakings to advance the state of the art in engineering design practice
- Service to the university and the profession

Academic Appointments

- Associate Professor, Department of Civil Engineering, West Virginia University Institute of Technology, 2018-Present
- Associate Professor, Department of Civil Engineering, Vanderbilt University, 1993-2000
- Assistant Professor, Department of Civil Engineering, Vanderbilt University, 1987-1993
- Research Assistant, Department of Civil Engineering, Rice University, 1980-1985
- Assistant Professor, Department of Civil Engineering, University of Santo Domingo, 1980

University Service

- Member/chair of faculty search committee, West Virginia University Institute of Technology, 2018
- Member of various faculty and department-chair search committees, Vanderbilt University, 1987-2000
- Member of various university committees (including Curriculum and Ethics), Vanderbilt University, 1987-2000

Research Grants

While at Vanderbilt University, research funds were obtained from the National Science Foundation, the Tennessee Department of Transportation, and the Engineering Foundation, for various studies including the dynamic buckle propagation and arrest in subsea pipelines, the behavior of high-performance concrete bridges, and the dynamics of wave-excited offshore platforms.

Affiliations and Service to the Profession

- Member of American Society of Civil Engineers (ASCE)
- Member of Sigma Xi, the Scientific Research Honor Society
- Member of the ASCE Seismic Effects Committee, 1992-1998
- Member of the ASCE Shock and Vibration Committee, 1996-2000
- Chair of the ASCE Stability Committee, 2000-2002
- Associate Editor of the ASCE Journal of Engineering Mechanics, 2000-2002

Industry Experience

- Senior Consultant / Vice President, TecPracTic, LLC; Structural engineering – offshore deep water platforms and subsea pipeline and riser systems (oil and gas production and transport), 2016-2017
- Senior Consultant / Vice President, RiserTec, Inc.; Dynamics of deep water riser systems (oil and gas production and transport), 2012-2016
- Engineering Department Manager, Technip/Genesis, Inc.; Heading 70-person department in support of successful execution and delivery of major offshore deep water engineering projects, 2011-2012
- Project Engineering Manager, Technip, Inc.; Responsible for the engineering execution and delivery for major offshore deep water projects, 2005-2011
- Executive Engineer and Technology Manager, INTEC Engineering, Inc.; Development and maintenance of company's engineering design infrastructure, including design guidelines and associated tools; delivery of technical training on analysis/design of systems; technical input and support to offshore projects across the organization, 2000-2005
- Engineering Specialist, INTEC Engineering, Inc.; Engineering assessments for offshore systems, 1985-1987
- Engineer, National Institute of Housing, Santo Domingo; Design of reinforced concrete and steel structures, 1979-1980

Select Publications

Seismic Response of Structures

Hahn, G. D., and Champlin, B. P., "Seismic Design of Structures by Bundled Columns," Journal of Engineering Mechanics, ASCE, Vol. 129, No. 12, pp. 1466-1474, 2003.

Hahn, G. D., and Valenti, M. C., "Correlation of Seismic Responses of Structures," Journal of Structural Engineering, ASCE, Vol. 123, No. 4, pp. 405-413, 1997.

Hahn, G. D., and Valenti, M. C., "Correlation Coefficient for Dynamic Structural Responses," 1996 ASME Pressure Vessel and Piping Conference, Montreal, Canada, July 21-26, 1996.

Hahn, G. D., Liu, X., "Torsional Response of Unsymmetric Buildings to Incoherent Ground Motions," Journal of Structural Engineering, ASCE, Vol. 120, No. 4, pp. 1158-1181, 1994.

Hahn, G. D., and Sathivageeswaran, K. R., "Effects of Added-Damper Distribution on the Seismic Response of Buildings," Journal of Computers and Structures, Vol. 43, No. 5, pp. 941-950, 1992.

Wave Excited Systems

Hahn, G. D. and Abughazleh, Q., "Practical Approaches for Wave Excited Structures," Proc. ASCE Structures Congress, New Orleans, April 1999.

Hahn, G. D., and Abughazleh, Q., "Peak Responses of Wave Excited Systems," Proceedings of the Structural Engineers World Congress, ASCE, San Francisco, California, Paper Reference T136-6, 1998.

Hahn, G. D., "Effects of Sea Surface Fluctuations on the Response of Offshore Structures," Journal of Structural Engineering, ASCE, Vol. 121, No. 1, pp. 63-74, 1995.

Hahn, G. D., "Concepts for Deep-Water Wave-Excited Offshore Structures," Journal of Structural Engineering, ASCE, Vol. 121, No. 10, pp. 1427-1435, 1995.

Hahn, G. D., and Sanghvi, J. R., "Dynamic Modal Responses of Wave Excited Offshore Structures," Journal of Engineering Mechanics, ASCE, Vol. 120, No. 4, pp. 893-908, 1994.

Riser/Pipeline Engineering

Hahn, G. D., Masson, C., Norris, M. A., and Williams, S. L., "Subsea Pipeline Vibration Dampers: Mitigation of Vortex Induced Vibrations"; OTC 26169-MS, Rio de Janeiro, Brazil, October 2015.

Masson, C., Lou, J., Saranyasontorn, K., Jesudasan, A.J., Zeng, W., Wang, L. and Hahn, G. D., "A review of fitness-for-service and life extension assessment methodologies relating to corrosion features in fatigue sensitive risers and pipelines," OTC 26103-MS, Rio de Janeiro, Brazil, October 2015.

Norris, M. A., Williams, S. L., Ptak, K. R., Mazzoleni, P., Hahn, G. D., and Masson, C.; "Passive Vibration Control Treatment for Subsea Pipelines"; OTC 24314, Rio de Janeiro, Brazil, October 2013.

Qiu, W., Cao, Q., Librino, F., Hahn, G. D., and Stanton, P. N., "Global Design and Analysis of Umbilical in Offshore Applications," Offshore Mechanics and Arctic Engineering (OMAE), ASME, Honolulu, Hawaii, May 31 - June 5, 2009.

Hahn, G. D., "Insight into Pipe-Soil Interaction," Offshore Mechanics and Arctic Engineering (OMAE) Conference Presentation, ASME, Halkidiki, Greece, June 12-17, 2005.

Hahn, G. D., Shanks, J. M., and Masson, C., "An Assessment of Steel Catenary Riser Trenching," Deep Offshore Technology (DOT) International Conference, Marseille, France, November 19-21, 2003.

Hahn, G. D., She, M., and Carney, J. F., "Buckle Propagation and Arresting in Offshore Pipelines," Journal of Thin Walled Structures, Vol. 18, No. 3, pp. 247-260, 1994.

Hahn, G. D., and Sriharan, S., "Lateral Response of Underground Pipelines to Earthquakes," Journal of Computers and Structures, Vol. 53, No. 3, pp. 601-611, 1994.

Hahn, G. D., Carney, J. F., and She, M., "A Simplified Collapse Model for Circular Rings Under External Pressure," Proceedings of the 1992 Structures Congress, ASCE, San Antonio, Texas, pp. 665-668, 1992.

Hahn, G. D., She, M., and Carney, J. F., "Buckle Propagation in Submarine Pipelines," Journal of Engineering Mechanics, ASCE, Vol. 118, No. 11, pp. 2191-2206, 1992.

Neonatal Transport Vibration Mitigation: Engineering Analysis and Ambulance Tests

Gajendragadkar G., Boyd J. A., Potter D. W., Mellen B. G., Hahn G.D., and Shenai J. P., "Mechanical Vibration in Neonatal Transport," Journal of Perinatology, Vol. 20, No. 307, 2000.

Calculation of Dynamic Response

Hahn, G. D., Carney, J. F., and Ray, M. H., "On the Numerical Evaluation of the Unforced Response of a Duffing Oscillator" (Technical Note), Journal of Applied Mechanics, ASME, Vol. 59, pp. 228-230, 1992.

Hahn, G. D., "A Modified Euler Method for Dynamic Analyses," Journal for Numerical Methods in Engineering, Vol. 32, pp. 943-955, 1991.