



# Mechanical Vibration

## Theory and Application

by Haym Benaroya, Mark Nagurka, and Seon Mi Han

---

### DESCRIPTION

*Mechanical Vibration: Theory and Application* presents comprehensive coverage of the fundamental principles of mechanical vibration, including the theory of vibration, as well as discussions and examples of the applications of these principles to practical engineering problems. The book also addresses the effects of uncertainties in vibration analysis and design and develops passive and active methods for the control of vibration. Many example problems with solutions are provided. These examples as well as compelling case studies and stories of real-world applications of mechanical vibration have been carefully chosen and presented to help the reader gain a thorough understanding of the subject.

#### Hardback

9781978831063, \$150.00

#### eBook

9781978831070, \$150.00

#### PDF

9781978831087, \$150.00

**Date:** July 2022

**Pages:** 612



### AUTHOR/EDITOR BIOGRAPHY

HAYM BENAROYA attended the Cooper Union and attended the University of Pennsylvania, earning his Ph.D. in Civil and Structural Engineering. He is a Distinguished Professor of Mechanical and Aerospace Engineering at Rutgers University. His areas of research interest generally include mechanical vibration, variational and nonlinear dynamics, and structural concepts, usually in challenging environments. Example applications include ocean structures, aviation structures, as well as structures for lunar surface habitation. His modeling approaches include reduced order and probabilistic frameworks.

MARK NAGURKA attended the University of Pennsylvania before earning his Ph.D. in mechanical engineering from M.I.T. His expertise is in the dynamics, control, and design of mechanical and electromechanical systems. He was a mechanical engineering professor at Carnegie Mellon and at Marquette University, where he is professor emeritus. He is an engineering consultant and works with engineering educators fostering an entrepreneurial mindset.

SEON HAN attended the Cooper Union and attended Rutgers, the State University of New Jersey, earning her Ph.D. in Mechanical Engineering. She

was a postdoctoral scholar at Woods Hole Oceanographic Institution, where she analyzed dynamics of ocean mooring systems. She is currently a lecturer in the Department of Mechanical Engineering at Texas Tech University. She is focused on undergraduate teaching in the areas of dynamics, vibrations, and control of mechanical systems.

**Get 30% OFF • Use code RUP30**

Free Shipping in the USA • USA & Latin American: [rutgersuniversitypress.org](http://rutgersuniversitypress.org) • 1-800-621-2736

Canada: <https://www.ubcpres.ca/rutgers-university-press> • Rest of the World: <https://mngbookshop.co.uk/publisher/rutgers-university-press/>

Booksellers / bulk sales: [sales@rutgersuniversitypress.org](mailto:sales@rutgersuniversitypress.org) • Examination and desk copies: [rutgersuniversitypress.org/educator](http://rutgersuniversitypress.org/educator)