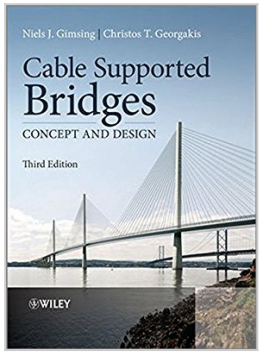

Cable Supported Bridges: Concept and Design

By Niels J. Gimsing, Christos T. Georgakis

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Fourteen years on from its last edition, *Cable Supported Bridges: Concept and Design, Third Edition*, has been significantly updated with new material and brand new imagery throughout. Since the appearance of the second edition, the focus on the dynamic response of cable supported bridges has increased, and this development is recognised with two new chapters, covering bridge aerodynamics and other dynamic topics such as pedestrian-induced vibrations and bridge monitoring.

This book concentrates on the synthesis of cable supported bridges, suspension as well as cable stayed, covering both design and construction aspects. The emphasis is on the conceptual design phase where the main features of the bridge will be determined. Based on comparative analyses with relatively simple mathematical expressions, the different structural forms are quantified and preliminary optimization demonstrated. This provides a first estimate on dimensions of the main load carrying elements to give in an initial input for mathematical computer models used in the detailed design phase.

Key features:

- Describes evolution and trends within the design and construction of cable supported bridges
- Describes the response of structures to dynamic actions that have attracted growing attention in recent years
- Highlights features of the different structural components and their interaction in the entire structural system
- Presents simple mathematical expressions to give a first estimate on dimensions of the load carrying elements to be used in an initial computer input

This comprehensive coverage of the design and construction of cable supported bridges provides an invaluable, tried and tested resource for academics and engineers.

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- 599 pages

Editorial Review

Review

“Pleasingly, this book is comprehensively referenced for those wishing to delve into further detail. While not a manual for detailed design, the contents of the book provide a comprehensive knowledge base for students and experienced engineers seeking to expand their understanding of these structures, which themselves continually challenge the boundaries of what is possible.” (*Engineering and Computational Mechanics*, 11 October 2013)

“The book is well organised into components: cables, pylons and anchorages, and goes into every possible detail … The book strikes a perfect balance between theory and practice. Professors Gimsing and Georgakis set out to give us an authoritative book about the evolution, trends and technical response of cable-supported bridges, and they have achieved that well.” (*The Structural Engineer*, 1 April 2012)

“Comprehensively updated to discuss improvements in technology in the fourteen years since its last printing, the third edition of this volume on the theory and design of cable supported bridges provides a detailed, element-by-element discussion of the core principles of suspension bridge design.” (*Book News*, 1 April 2012)

From the Publisher
Cable supported bridges in the form of suspension bridges and cable-stayed bridges are distinguished by their ability to overcome large spans. This book concentrates on the synthesis of cable supported bridges covering both design and construction aspects. The analytical part covers simple methods to quantify the different structural forms and allows a preliminary optimization of the main structure. Completely revised and updated, this second edition is justified by an accelerated pace of innovation within this field of bridge technology. It includes the latest advancements in wind tunnel testing and results of computer analyses. Numerous halftones and figures supplement the text.

From the Back Cover
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