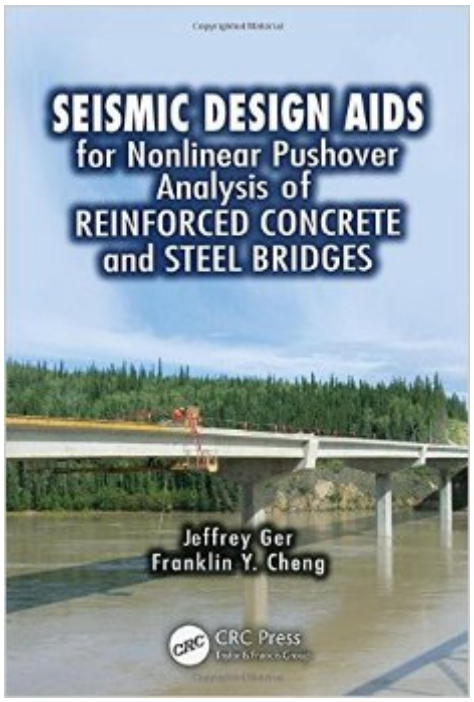
Seismic Design Aids For Nonlinear Pushover Analysis Of Reinforced Concrete And Steel Bridges (Advances In Earthquake Engineering)



Synopsis

Nonlinear static monotonic (pushover) analysis has become a common practice in performance-based bridge seismic design. The popularity of pushover analysis is due to its ability to identify the failure modes and the design limit states of bridge piers and to provide the progressive collapse sequence of damaged bridges when subjected to major earthquakes. Seismic Design Aids for Nonlinear Pushover Analysis of Reinforced Concrete and Steel Bridges fills the need for a complete reference on pushover analysis for practicing engineers. This technical reference covers the pushover analysis of reinforced concrete and steel bridges with confined and unconfined concrete column members of either circular or rectangular cross sections as well as steel members of standard shapes. It provides step-by-step procedures for pushover analysis with various nonlinear member stiffness formulations, including: Finite segmentâ “finite string (FSFS) Finite segmentâ “moment curvature (FSMC) Axial loadâ “moment interaction (PM) Constant moment ratio (CMR) Plastic hinge length (PHL) Ranging from the simplest to the most sophisticated, the methods are suitable for engineers with varying levels of experience in nonlinear structural analysis. The authors also provide a downloadable computer program, INSTRUCT (INelastic STRUCTural Analysis of Reinforced-Concrete and Steel Structures), that allows readers to perform their own pushover analyses. Numerous real-world examples demonstrate the accuracy of analytical prediction by comparing numerical results with full- or large-scale test results. A useful reference for researchers and engineers working in structural engineering, this book also offers an organized collection of nonlinear pushover analysis applications for students.

Book Information

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Customer Reviews

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I don’t have problem downloading the executable file of the computer program and the input file examples from the publisher’s web site. The content of the book is useful for practicing engineers and graduate students.

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This excellent book provides the step-by-step procedures for pushover analysis of structures. Pushover analysis is to find out the structure response when the structural meterial reaches its inelastic range. I did not take any inelastic structural analysis courses when I was in the collage. This book provides me a good understanding of what inelastic analysis is all about. Also the appendices of this book provides readers the basic knowledge of sructural dynamics, which is very helpful for me to get familar with the inelastic analysis of structures subjected to earthquake. Great book!

Earthquake Engineering) Reinforced Concrete Structures: Analysis and Design, Second Edition Theory of Nonlinear Structural Analysis: The Force Analogy Method for Earthquake Engineering The Men of Steel Anthology: The Men of Steel (special edition 2015 includes new release Raising Steel: Momma Joe's story) Seismic Analysis and Design for Soil-Pile-Structure Interactions: Proceedings of a Session Sponsored by the Committee on Geotechnical Earthquake ... of Civil (Geotechnical Special Publication) Seismic design with supplemental energy dissipation devices (Publication / Earthquake Engineering Research Institute) Seismic Design and Retrofit of Bridges Reinforced Concrete: Mechanics and Design (6th Edition) Reinforced Concrete: Mechanics and Design Design of Reinforced Concrete, 10th Edition