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4.3.2 Force Analogy Method for Static Multi-Degree-of-Freedom Systems 4.4 Nonlinear Dynamic Analysis of Structures with Flexural Members; 4.4.1 Hysteretic Behaviors of the Flexural Members; 4.4.2 Solution Procedure of the FAM; References; 5 Axial Deformation Member; 5.1 Physical Theory Models for Axial Members; 5.1.1 General Parameters; 5.1.2 Displacement Decomposition; 5.2 Sliding Hinge Mechanisms; 5.3 Force Analogy Method for Static Axial Members; 5.3.1 Regions O-A and O-F; 5.3.2 Region F-G; 5.3.3 Regions A-A and A-B; 5.4 Force Analogy Method for Cycling Response Analysis of Axial Members
5.4.1 Region B-C5 4.2 Region C-D; 5.4.3 Region D-A2; 5.4.4 Region D-E; 5.4.5 Region E-F; 5.4.6 Region Aa2-A2; 5.5 Application of the Force Analogy Method in Concentrically Braced Frames; 5.5.1 Force Analogy Method for Static SDOF CBFs; 5.5.2 Force Analogy Method for Static MDOF CBFs; 5.5.3 Force Analogy Method for Dynamical CBF sunder Earthquake Loads; References; 6 Shear Member; 6.1 Physical Theory Models of Shear Members; 6.1.1 Flexural Behavior; 6.1.2 Axial Behavior; 6.1.3 Shear Behavior; 6.2 Local Plastic Mechanisms in the FAM; 6.2.1 Displacement Decomposition; 6.2.2 Behavior of VSH
6.2.3 Behavior of HSH

Sommario/riassunto

"A comprehensive book focusing on the Force Analogy Method, a novel method for nonlinear dynamic analysis and simulationThis book focusses on the Force Analogy Method, a novel method for nonlinear dynamic analysis and simulation. A review of the current nonlinear analysis method for earthquake engineering will be summarized and explained. Additionally, how the force analogy method can be used in nonlinear static analysis will be discussed through several nonlinear static examples. The emphasis of this book is to extend and develop the force analogy method to performing dynamic analysis on structures under earthquake excitations, where the force analogy method is incorporated in the flexural element, axial element, shearing element and so on will be exhibited. Moreover, the geometric nonlinearity into nonlinear dynamic analysis algorithm based on the force analogy method is included. The application of the force analogy method in seismic design for buildings and structural control area is discussed and combined with practical engineering"--