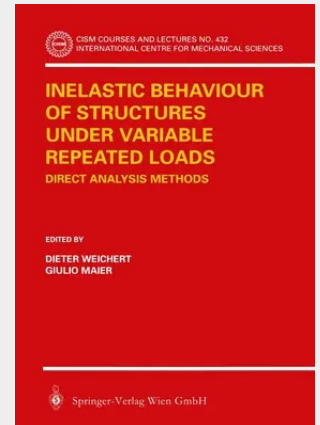


Inelastic Behaviour of Structures under Variable Repeated Loads

Direct Analysis Methods

This book deals with the safety assessment of structures and structural components, possibly operating beyond the elastic limits under variable repeated thermo-mechanical loads. Examples of such situations can be found both in mechanical and civil engineering (e.g. transportation technologies, pressure vessels, pipelines, offshore platforms, dams, pavements and buildings in seismic zones). So-called "direct" methods are focused, based on the shakedown theorems and their specialisation to limit theorems. These methods are receiving increased attention for the prediction of structural failure because they provide the information that is essential in practice (e.g. safety factor and collapse mechanisms) by more economical procedures than step-by-step inelastic analysis; also, they only need a minimum of information on the evolution of loads as functions of time. The addressed audience are primarily engineers and scientists active in Structural Engineering and Safety and Reliability Analysis.

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