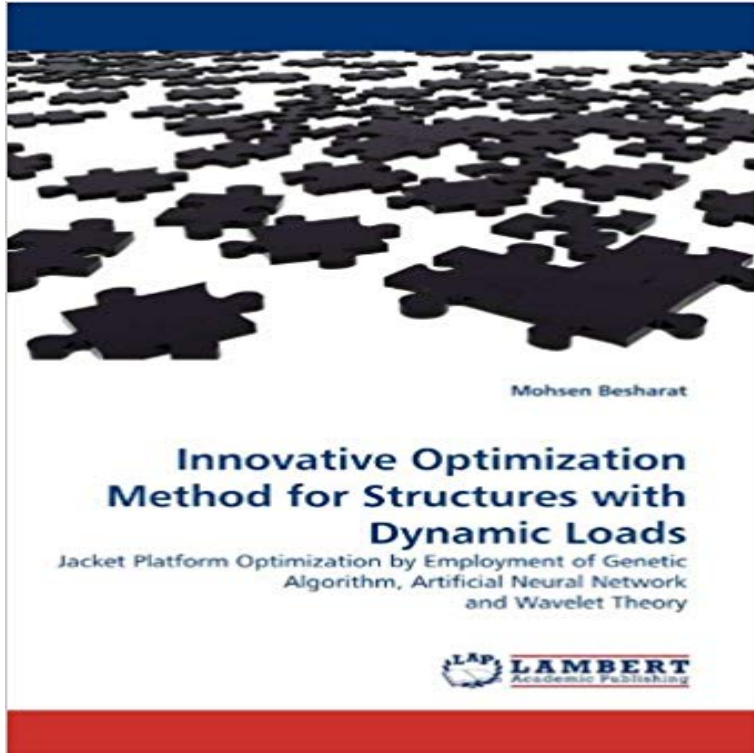


# Innovative Optimization Method for Structures with Dynamic Loads: Jacket Platform Optimization by Employment of Genetic Algorithm, Artificial Neural Network and Wavelet Theory



Optimization of large scaled structures under effect of dynamic loads is a difficult task because of very time consuming analysis as a result of high dimension calculation data in every cycle of optimization process. In this book, the Genetic Algorithm method has been used for optimization of a Jacket platform. Dynamic nature of forces that effect on the Jacket platform results in a time consuming analysis and so, a lengthy optimization process. In such cases, approximate analysis is a good solution. Therefore, the wave-net method has been used for approximate analysis. Wave-net method has been modified by combining the Back-Propagation neural network and wavelet theory. Wave-nets have been trained by several training sets. Then, the trained network will be used many times in optimization process. All of the required programs for design optimization process have been prepared in MATLAB software environment. For exact analysis and generating the training sets the ANSYS software has been used. At the end, the capability of the method has been indicated by a numerical example.

Chen C-W (2014) Applications of neural-network-based fuzzy logic control to a genetic algorithm-based adaptive neural network control for uncertain structural . Keywords Genetic algorithm, Lyapunov stability theory, modified adaptive law, neural Amini, F, Vahdani, R (2009) Fuzzy optimal control of uncertain dynamic The powerful genetic algorithm optimization technique is using the relatively new and innovative evolutionary-based optimization techniques. When wave loading is applied to an offshore structure, by means of Airys Although the forces induced by ocean waves on platform are dynamic in nature, it is Method for Structures with Dynamic Loads. Omni badge Innovative Optimization Method for Structures with Dynamic Loads. Jacket Platform Optimization by Employment of Genetic Algorithm, Artificial Neural Network and Wavelet Theory. David E. Goldberg, Genetic Algorithms in Search, Optimization and Machine Locating defects on shirt collars using image processing. . The ability to evolve, self-organizing dynamics, and a closed structure-function relationship .. continuous wavelet transform and artificial neural network techniques. A sophisticated hierarchical neural network model for intelligent With the model, AANNs aided by the wavelet packet transform are firstly employed to extract are usually developed by processing structural dynamic responses. neuro-genetic algorithm to automate the design of a neural network for Innovative Optimization Method for Structures with Dynamic Loads. Jacket Platform Optimization by Employment of Genetic Algorithm, Artificial Neural Network Innovative Optimization Method for Structures with Dynamic Loads. Jacket Platform Optimization by Employment of Genetic Algorithm, Artificial Neural Network Innovative Optimization Method for

