

Kadomtsev M. I. Lyapin A. A. (Rostov-on-Don, Russia) — Stochastic methods of analysis of nonstationary signals in structure health monitoring.

The problem of analysis of dynamic response of structures to external stochastic loads in structure health monitoring is considered. The object of the study is the construction design. The aim of the study is the presence or absence of structural damage. To achieve this goal, we use an approach that includes statistical processing of data obtained using a network of vibration sensors, recognition of statistical patterns using a unsupervised neural network. In contrast to the methods discussed in [2], statistical parameters of amplitude and energy distribution in the frequency domain are taken as input data for the neural network. The data obtained from sensors developed in ASA DSTU are used for the analysis. In addition, data obtained by modeling a structure [1] using finite element and boundary element methods for different soil structures are used.

REFERENCES

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