

Own oscillations of the fragment stands of the sports complex "Arena-Omsk" from the natural background

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ABSTRACT

The article presents the results of measuring the natural vibration frequencies, vibration forms and damping coefficients for the sports complex stands.

Operational modal analysis based on the results of measurements was performed by ARTeMIS Extractor Pro [1]. In work the equipment of firm Reflex (USA) was used [2].

The results of identification of ED and SI CV with indication of confidence intervals (with a given confidence probability of 95%) and corresponding coefficients of variation are presented. The coefficients of the MAC for the mode shapes, obtained by EFD and SIKA.

The measured frequency of the first form of natural oscillations is in the range of 3.61 ± 0.46 Hz. Based on the analysis of the shape of the oscillations (all points of the structure synchronously to each other make vertical oscillations), this form of oscillations refers to the vibrations of the base-structure.

As a result of measurements of the response of the tribune structure from the operational impact, it was revealed that the first natural frequency of vertical oscillations of the investigated structures is higher than 6 Hz, which does not limit the operation of these structures for various measures according to the frequency criterion [3].

REFERENCES

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