
An automated research complex on theoretical mechanics

© V.V. Dubinin, V.V. Vitushkin

Bauman Moscow State Technical University, Moscow, 105005, Russia

The article presents a novel automated research complex on the basic parts of the theoretical mechanics and the theory of oscillations that corresponds to up-to-date level of scientific investigations and educational process. The complex makes possible mathematical modeling and physical simulation of real physical processes using model installations, specifically those of main processes in industrial objects. The installations are equipped with necessary measuring and control elements, as well as computers and corresponding software.

Keywords: the theoretical mechanics, the theory of oscillations, laboratory research complexes, mathematical modelling, physical experiment.

REFERENCES

- [1] Dubinin V.V. Fizicheskiy eksperiment v nekotorykh zadachakh mekhaniki [Physical experiment in some problems of mechanics]. *Trudy zonalnogo soveschaniya-seminara zaveduyuschikh kafedrami teoreticheskoy mekhaniki Tsentralnogo i Privalzhskogo federalnykh okrugov RF* [Works of the zonal meeting-seminar of the heads of the departments of Theoretical Mechanics of the Central and Volga federal districts of the Russian Federation]. Ulyanovsk, 2002, pp. 14–15.
- [2] Dubinin V.V., Vitushkin V.V., Nazarenko B.P. Sovremennyi laboratornyi kompleks po teoreticheskoy mekhanike. *Sbornik Integratsiya obrazovaniya, nauki i proizvodstva* [The modern laboratory facilities on theoretical mechanics. Coll. Integration of education, science and industry]. *Materialy sektsionnogo zasedaniya Mezhdunarodnoy konferentsii IX Mezhdunarodnogo foruma "Vysokie tekhnologii XXI veka"* [Materials of the sectional meeting of Int. Conf. IX Int. Forum "High Technologies of XXI Century"]. Moscow, April 23, 2008. Moscow, BMSTU, 2008, pp. 153–156.
- [3] Dubinin V.V., Vitushkin V.V., Dubrovina G.I. Fizicheskiy eksperiment, matematicheskoe modelirovaniye i informatsionnye metody obrabotki dannyykh v mekhanike. Mekhanika. Nauchnye issledovaniya i uchebno-metodicheskie razrabotki [Physical experiment, mathematical modeling and information processing techniques in mechanics. Mechanics. Research and learning aids]. Mezhdunarodnyi sbornik nauchnykh trudov [Int. Coll. of scientific papers]. Gomel, BSUT Publ., 2009.
- [4] Dubinin V.V., Vitushkin V.V. *Inzhenernyi zhurnal: nauka i innovatsii — Engineering Journal: Science and Innovations*, 2012, iss. 7. Available at: <http://engjournal.ru/articles/286/286.pdf>

Dubinin V.V. (b. 1937) graduated from Bauman Moscow Higher Technical School in 1961. Ph.D., assoc. professor of the Department of Theoretical Mechanics at Bauman Moscow State Technical University. Author of more than 250 scientific publications in the field of theoretical and applied mechanics. e-mail: fn3@bmstu.ru

Vitushkin V.V. (b. 1942) graduated from Bauman Moscow Higher Technical School in 1968. Ph.D., assoc. professor of the Department of Theoretical Mechanics at Bauman Moscow State Technical University. Author of more than 100 scientific publications in the field of applied aerogasdynamics and theoretical mechanics. e-mail: fn3@bmstu.ru
