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SOLUTION OF SYSTEMS OF LINEAR ALGEBRAIC EQUATIONS BY MODIFIED CONJUGATE GRADIENT METHODS

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ABSTRACT: In the following article, the use of personal computers led to the creation of virtual laboratories as an alternative to traditional training laboratories. A virtual laboratory is generally a numerical programming program that has an interface that mimics the real laboratory actions (work) of a researcher.

Keywords: distance learning, local vibration, alternative-virtual, simulation modeling systems, input efficiency, industrial packages, resonance mode.

INTRODUCTION

Using modern numerical methods of calculations on modern personal computers with high speed and large amount of memory, it is possible to study complex examples with the same accuracy as the results obtained in experiments conducted on real objects.

Problem statement. In recent years, a new term "Virtual Learning Lab" (Virtual Learning Lab) has emerged in the field of application of Information and Communication Technology. In the field of technical education, the Virtual Training Laboratory is aimed at implementing the above requirements for computerization of training, meets the ideas of open and distance learning, helps to solve acute problems in the logistics of the educational process, at least in part.

Research style. To date, few scientific and methodological works on the topic of Virtual Learning Labs are mainly limited to the description of virtual equipment and laboratory work performed using them. But methodologically, the Virtual Learning Lab is wider, and in addition to virtual equipment, it includes virtual learning cabinets, mathematical and simulation modeling systems, training and industrial packages of applications, and more. The virtual learning laboratory can be used not only in laboratory materials, but also in student course and diploma projects, teaching and research work.

The use of virtual labs in the learning process is as follows has advantages:

- Increasing the activity and independence of students in the classroom;

- increase the level of mastery of educational materials;

- Full control over the mastery of educational materials by each student;

- Facilitate the process of consolidation and consolidation of knowledge gained through training;

- increase the effectiveness of the introduction of independent learning in the educational process. In traditional teaching methods,

great emphasis is placed on laboratory and practical training, which serves to consolidate the theoretical knowledge acquired in the subject and to develop practical skills.

The use of computer technology in the modeling of real processes, including processes occurring in electrical circuits, provides an opportunity to expand and enrich laboratory practice.

Laboratory practice is of great educational and methodological importance. But today, many laboratory equipment and devices do not meet modern requirements, as they were manufactured decades ago. Laboratory work is performed on physical models. They are not universal enough to check processes comprehensively. Due to the limited number of laboratory facilities, several students have to work on one facility at a time. At present, one of the directions of improving laboratory equipment is to make them computer-based [1].

The effectiveness of human activities largely depends on the tools, the ability of the organism to work, the organization of the workplace, the hygienic factors of the production environment, including natural light. One of the most important factors that increase work efficiency is the improvement of skills and competencies in work activities.

Vibration reduction measures should be identified, with the industry fully mechanized and automated. Because the only way to completely eliminate the effects of vibration is to automate the whole technology and ensure that people do not enter the vibration zones. This is because vibration may not affect the worker unless the shops are operated remotely. Currently, the following methods are used to reduce vibration at non-automated production sites.

1) Reduce vibration at the source of emission.

2) Reduction in the path of propagation.

Z) Reduce the effects of vibration by creating special working conditions.

4) Use of personal protective equipment.

5) Determining health measures.

The following methods of combating vibration can be used as a conclusion to the analysis of the vibration equation of a system with one degree of freedom:

1) Reduction of vibration by exposure to the source of emission;

2) Loss of resonance mode is achieved by selecting a reasonable mass of the mechanism or by increasing the priority of the vibrating system.

3) The method of vibrodamprification is carried out by converting vibration energy into other types of energy.

4) Dynamic quenching of vibration - as a result of applying a certain force to the system through the vibrating base, it is ensured that the vibration does not pass to the foundation.

During the design of technological processes, it is necessary to try to eliminate or sharply reduce machine mechanisms with sharp impact processes and sharp accelerations and decelerations as a result of the influence of dynamic forces [2].

Results. Replacing roller bearings with sliding bearings also gives good results as a means of reducing vibration. Low-frequency vibrations in machines such as pumps and fans are caused by the disproportion of their rotating parts. Because these machines rotate at high speeds, even a small disproportion can cause a large vibration. Below is a modern virtual method of determining local vibration parameters (Picture-1).

Picture-1. A modern virtual method of determining local vibration parameters

Conclusion. Thus, regardless of the scope of work of modern specialists, a wide range of knowledge in computer science, sufficient skills in modern computing and information communication systems, office equipment and their use, as well as the basics of new information technology and its future, must incorporate knowledge of its development [3-5]. Using a programming system, the dB vibration of the resonant frequency level is determined to what extent the vibration frequency is reduced.

References

1. Rasuleva M.A., Yuldoshev O.R. Security issues in video terminals. -T .: 2004.

2. Yormatov G. Yo. and others. Life safety. Study guide. -T .: 2005.

3. O'. Yuldashev et al. Labor protection. -T .: Mehnat, 2005.

4. Yormatov G'.Yo. and others. Life safety. –T .: "Aloqachi", 2009. - 348 pp.

5. O.R.Yuldashev, A.X. Rasulev, G.M. Gulomova Methodical manual for laboratory work on the subject "Safety of life". TDTU Publishing House .2013.-7-9pp.

1. Rasuleva M.A., Yuldoshev O.R. Security issues in video terminals. -T .: 2004.