THEORETICAL ASPECTS REGARDING THE VIBRATIONS REDUCING OF THE MACHINES TOOLS WITH A NONCONVENTIONAL MATERIALS STRUCTURE

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Abstract. This paper presents some theoretical aspects regarding some optimal solutions selection in order to reduce the vibrations of a multifunctional machine tool with nonconventional materials structure. Also, the paper is focused towards an optimization algorithm of the structure proprieties as a shape and structure function in the usage of the vibrations' absorption elements. The multifunctional machine is made to achieve various cutting operations, which means some particularities of the dynamic actions in the structure's context which is made with new materials. The vibrations amortizations' problematic at a multifunctional machine tool suppose the accomplishment of three problems: reducing at minimum of the operator group's vibrations, reducing at minimum of the vibrations transmitting in the machine structure and the remanent vibrations absorption.
Key words: Nonconventional Materials, Vibrations, Machine Tool