

METHOD TECHNOLOGICAL PROVISION OF DETAIL'S QUALITY PARAMETERS

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An important feature of the operational reliability of instrument and mechanical engineering products is the provision of the required quality parameters for the surface layer of details. Therefore, the technological process of detail's producing with the choice of rational methods of its machining, which provides the necessary quality parameters of the treated surfaces with its maximum productivity or minimal cost, is brought to the fore.

The target of the work is to create a methodology for determining the rational working conditions of the workpiece that provide the required quality parameters, using modern methods of computer and mathematical modeling.

To achieve this target, we propose to combine mathematical and computer simulation methods. One of these methods of mathematical modeling is to use the finite element method. The advantage of this method is the accuracy of calculations, the clarity of the results obtained and the high flexibility in calculations.

By these means the calculation of the machining modes of the details and the quality parameters of the surface layer of the workpiece, which arose due to temperature and force loads, were performed [1].

It is proposed to perform the results' verification of calculating the parameters for the surface of the workpiece layer by means of computer simulation with the help of FEMAP system, which allows to create a finite element model of a workpiece considering its geometric structure [2].

According to the results of computer simulation, the assignment correctness of the workpiece machining modes is checked and recommendations for their correction are given that provide the necessary quality parameters of the surface layer.

References

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