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## **APPROXIMATE CALCULATION OF TRIPLE INTEGRALS FROM RAPIDLY OSCILLATING FUNCTIONS OF A GENERAL FORM USING NEW INFORMATION OPERATORS**

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Integrals of rapidly oscillating functions of many variables are one of the central concepts of digital signal and image processing. Research of algorithms that use new information operators are currently relevant in this field [1, 2].

There are optimal accuracy algorithms for calculating integrals from rapidly oscillating functions of many variables (regular case) [3, 4]. Approximate calculation of integrals from rapidly oscillating functions of many variables for the irregular case is a more complex, important task of digital signal and image processing [5, 6].

In the works [6] presents the cubature formula for the approximate calculation of the triple integral from a rapidly oscillating function in the general form in the case when the information about the function was given by corresponding traces on mutually perpendicular planes. The cubature formula was built on the use of the interflatation operator with auxiliary functions in the form of piecewise constant splines.

The purpose of this research is to construct cubature formulas for the approximate calculation of triple integrals from rapidly oscillating functions of a general form, which in their construction use an interlineation operator built on the basis of an interflatation operator and an interpolation operator built on the basis of an interflataion operator with auxiliary functions in the form of piecewise constant splines. Obtain estimates of the approximation error on different classes of functions. To conduct testing of the proposed cubature formulas, to show their effectiveness in terms of the amount of input information and to reveal the potential capacity of the proposed formulas.

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