
Methodological aspects of the surface integrals calculation

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The article studies the methodological aspects of calculation of the surface integrals of the first and second kind. In educational materials on mathematical analysis there are cumbersome formulae for surface integrals calculations for surfaces defined by the parametric equations. Most students use only special cases of these formulae, which do not always allow them to solve the problems quickly and efficiently. In this article the same formulae for surface integrals calculation as in the educational materials are presented but the formulae are written in a very simple form. It is shown that the special cases of the formulae are obtained directly from the main formulae in the process of solving specific tasks. The proposed approach makes it possible to calculate the surface integrals efficiently. Some examples of calculation of the surface integrals of the first and second kind using the proposed technique are given.

Keywords: *parametric surface equations, principal normal, surface integral of the first kind, surface integral of the second kind.*

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