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ON ASYMPTOTIC ESTIMATION OF APPROXIMATION OF FUNCTIONS BY GENERAL MELLIN TYPE SINGULAR INTEGRALS

Abstract

In 1972 Kolbe and Nessel used the Mellin transformation method and determined the classes of saturation of a Mellin type singular integral in metric of the space $L^p(0, \infty)$, ($p \geq 1$). Futher, R. G. Mamedov and his followers studied the classes and orders of saturation of Mellin convolution type m -singular integrals [6]. The present paper is devoted to investigation of asymptotic order of approximation of a family of general integral operators to the functions whose differential properties are characterized by M -derivatives. Furthermore, it is shown construction of new linear aggregates on the basis of the given linear operators of Mellin convolution type that represent a higher order of approximation of function.

Notice that the obtained results contain appropriate results of Kolbe, Nessel and R.G. Mamedov as special cases.