

Abstract: The thesis deals with the  $HKS_\alpha^p$  integral, which is generalization of the  $HKS$  integral, its properties and the concepts of ordinary oscillation and  $p$ -oscillation, which are needed for the construction of the integral. This integral is non-absolutely convergent and more general than the Lebesgue integral. This thesis is based on recent results in the theory of integrals and its goal is to introduce this integral to a wide readership interested in mathematical analysis.