

Abstract

The main question of this thesis is whether the partial sums of Fourier series converge in some sense to the function from which the series was derived. In our case we will analyze the convergence of Fourier series of Lebesgue integrable functions and the convergence will be meant in the sense of L^p spaces for $p \in [1, \infty)$. The case $p = 2$ could be concluded from properties of orthogonal basis in Hilbert spaces. Our intention is to analyze the problem especially for the other $p \in [1, \infty)$. Therefore we need to use some results from the theory of Banach (particularly L^p) spaces.