

Abstract

The analysis of the convergence behavior of the multilevel methods is in the literature typically carried out under the assumption that the problem on the coarsest level is solved exactly. The aim of this thesis is to present a description of the multilevel methods which allows inexact solve on the coarsest level and to revisit selected results presented in literature using these weaker assumptions. In particular, we focus on the derivation of the uniform bound on the rate of convergence. Moreover, we discuss the possible dependence of the convergence behavior on the mesh size of the initial triangulation.