

In this thesis we will focus on a problem of length bounded cut, also known as L -bounded cut. We are going to show a combinatorial algorithm for finding a minimal L -bounded cut on graphs with bounded treewidth based on dynamic programming. Then we going to show that this algorithm can also be used for finding minimal L -bounded cut on planar graphs. We are also going to look at problem of $(d_G(s, t) + 1)$ -bounded cut. This problem is known to be NP -hard for general graphs. But it is an open problem whether this problem is also NP -hard on planar graphs with special vertices on the outer face. We will try to outline a way, which might lead to showing that this problem is solvable in a polynomial time.