

This thesis studies the problem of clustered planarity and follows two directions. First direction deals with computational complexity, where we show how clustered planarity can be solved in linear nondeterministic time in terms of the number of vertices of the input graph. Second direction is characterization of restricted versions of clustered planarity using minimal non-clustered-planar instances. For this purpose we introduce a notion of clustered minor using several operations reducing clustered graphs. We show that these operations preserve clustered planarity. We show that in the case of clustered graphs where clusters have size 2 and the graph is a cycle or a path, there are only finitely many minimal non-clustered-planar minors. We also mention known results about the computational complexity of clustered planarity.