

The notion of submodular partition functions generalizes many of well-known tree decompositions of graphs. For fixed  $k$ , there are polynomialtime algorithms to determine whether a graph has tree-width, branch-width, etc. at most  $k$ . Contrary to these results, we show that there is no subexponential algorithm for determining whether the width of a given submodular partition function is at most two. In addition, we also develop another dual notion for submodular partition functions which is analogous to loose tangles for connectivity functions.