Abstract

We give a general approach for solving optimization problems on noisy minor free and bounded treewidth graphs, where a fraction of edges are adversarially corrupted. The noisy setting was first considered by Magen and Moharrami and they gave a $(1+\epsilon)$-estimation algorithm for the independent set problem. Later, Chan and Har-Peled designed a local search algorithm that finds a $(1+\epsilon)$-approximate independent set. However, nothing was known regarding other problems in the noisy setting. Our main contribution is a general LP-based framework that yields $(1+\epsilon)$-approximation algorithms for noisy MAX-k-CSPs.