

An $O(\log k)$ -Approximation for Directed Steiner Tree in Planar Graphs

Wednesday, July 12, 2023 11:45 AM (20 minutes)

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Abstract: We present an $O(\log k)$ -approximation for both the edge-weighted and node-weighted versions of \DST in planar graphs where k is the number of terminals. We extend our approach to \MDST\footnote{In general graphs \MDST and \DST are easily seen to be equivalent but in planar graphs this is not the case necessarily.}, in which we get a $O(R + \log k)$ -approximation for planar graphs for where R is the number of roots.

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Session Classification: Track A-1