

# Approximation Algorithms for Sparsest Cut

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Major: Theoretical Computer Science

**Research problem** What is the best possible approximation rate of linear programming based approximation algorithms for SPARSEST CUT? What about algorithms for planar graphs?

## 1 Introduction

## 2 Literature Review

## 3 The Research Design

## 4 Time Table

SPARSEST CUT and NON-UNIFORM SPARSEST CUT [[Chalermsook et al., 2024](#)]

## References

Parinya Chalermsook, Matthias Kaul, Matthias Mnich, Joachim Spoerhase, Sumedha Uniyal, and Daniel Vaz. Approximating Sparsest Cut in Low-Treewidth Graphs via Combinatorial Diameter. *ACM Transactions on Algorithms*, 20(1):1–20, January 2024. ISSN 1549-6325, 1549-6333. doi: 10.1145/3632623. URL <http://arxiv.org/abs/2111.06299>. arXiv:2111.06299 [cs].