

reduce to APSP with nonnegative edge weights.

1. $O(nm)$ [2].
2. randomized $\frac{n^3}{2^{\Omega(\sqrt{\log n})}}$ [3], and deterministic $\frac{n^3}{2^{\Omega(\sqrt{\log n})}}$ [1].

References

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- [2] Mikkell Thorup. Undirected single-source shortest paths with positive integer weights in linear time. *Journal of the ACM (JACM)*, 46(3):362–394, 1999.
- [3] Ryan Williams. Faster all-pairs shortest paths via circuit complexity. In *Proceedings of the forty-sixth annual ACM symposium on Theory of computing*, pages 664–673, 2014.