

ANTIDIRECTED PATHS IN ORIENTED GRAPHS

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We show that for any integer $k \geq 4$, every oriented graph with minimum semidegree bigger than $\frac{1}{2}(k - 1 + \sqrt{k - 3})$ contains an antidirected path of length k . Consequently, every oriented graph on n vertices with more than $(k - 1 + \sqrt{k - 3})n$ edges contains an antidirected path of length k . This asymptotically proves the antidirected path version of a conjecture of Stein and of a conjecture of Addario-Berry, Havet, Linhares Sales, Reed, and Thomassé, respectively.

References

- [1] A.Grzesik, M.Skrzypczyk, Antidirected paths in oriented graphs. arXiv:2506.11866 (2025).