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COARSE Menger's THEOREM FOR TWO PATHS

The “coarse Menger’s conjecture” states that for any $k, d \geq 1$ there exists $\ell > 0$ such that for every graph G and any $S, T \subseteq V(G)$ either there exist k paths between S and T pairwise at distance at least d , or there exists $X \subseteq V(G)$ such that $|X| \leq k - 1$ and every path between S and T is at distance at most ℓ from X . The conjecture in general is refuted, though it remains true or is still open under specific conditions. We focus on the case $k = 2$, which is already known to be true. We improve the best known bound on ℓ .

This is a joint work with Piotr Micek.