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# FIXED POINT RESULTS ON PERTURBED METRIC SPACES WITH DIRECTED GRAPHS

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## ABSTRACT

This study explores the properties of fixed points regarding self-mappings situated within perturbed metric spaces that are equipped with a graph. We derive a Banach-style theorem that guarantees both the existence and uniqueness of fixed points by synthesizing the concepts of perturbed metrics with graph-preserving maps under specific contraction criteria. The findings presented herein effectively extend the scope of numerous established theorems found in both standard and generalized metric literature. Furthermore, numerical examples are included to verify the consistency and potential applications of the proposed theorem.

**Keywords** fixed point · perturbed metric space · graph theory

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