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Coupled Fixed Point Theorem with EA Property in Neutrosophic Metric Spaces

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Abstract: *In this paper, we establish a coupled fixed point theorem under the Existence and Approximation (EA) property in a neutrosophic met- ric space. The proposed framework generalizes the Banach contraction principle and extends classical fuzzy and intuitionistic fuzzy results by incorporating indeterminacy through neutrosophic components. The EA property eliminates the need for continuity assumptions while en- suring convergence and uniqueness of the coupled fixed point. An illus- trative example demonstrates the validity of the obtained results.*

Keywords: Coupled fixed point theorem, Neutrosophic metric space, EA property, Compatibility, Indeterminacy, Nonlinear analysis

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