
HICKS CONTRACTION MAPPING IN INTUITIONISTIC FUZZY B-METRIC SPACES

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ABSTRACT

In recent years, fuzzy b-metric spaces that combine b-metric and fuzzy metric structures have been studied by different authors. Hicks introduced the concept of C-contraction in the study of fixed point theory for fuzzy metric spaces. More recently, Romaguera generalized and unified the previous results within the framework of fuzzy b-metric spaces and further extended Hicks's concept to this new setting. In this study, we define intuitionistic fuzzy b-metric spaces in the sense of Romaguera and introduce Hicks-type contraction mappings within these spaces. We also investigate the completeness of intuitionistic fuzzy b-metric spaces. Our findings generalise the classical results in fuzzy b-metric environment and extend the fixed point theorem in fuzzy b-metric environment to the intuitionistic fuzzy context. This study contributes to a broader understanding of fixed point theory in intuitionistic fuzzy environments and aims to provide a fundamental step for further applications.

Keywords Complete · fixed point · hicks contraction · intuitionistic fuzzy b-metric space

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