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On Fixed Figure Problems in Fuzzy Cone Metric Spaces

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Abstract

Fixed circle difficulties correspond to a field of problems in metric fixed point theory. Finding selfmappings that are invariant at every point on the circle in the space is the specific challenge. Recently this topic is thoroughly explored in several metric spaces. Our present effort is in the arena of the expansion of this line of research in the setting of fuzzy cone metric spaces. For our purposes, we first define the concepts of a fixed circle and a fixed Cassini curve. Next, we identify appropriate criteria that guarantee the existence and uniqueness of a fixed circle (or Cassini curve) for the self operators. Additionally, we provide a solution that states that the fuzzy quasinonexpansive mapping's fixed point set is always closed. Our results are supported by examples.

Keywords: Fuzzy cone metric space, Fixed circle, Archimedean t-norm, Mh-triangular fuzzy metric

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