

COMMON FIXED POINT RESULT IN ORDERED CONE METRIC SPACES

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Abstract

Fixed point and common fixed point results for generalized contractive mappings are obtained in ordered cone metric spaces.

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1. Introduction and Preliminaries

Recently, Huang and Zhang [4] introduced the concept of a cone metric space, replacing the set of positive real numbers by an ordered Banach space. They obtained some fixed point theorems in cone metric spaces using the normality of cone which induces an order in Banach spaces. Rezapour and Hambarani [9] showed the existence of a non normal cone metric space and obtained some fixed point results in cone metric spaces. Subsequently, Abbas and Rhoades [1] studied common fixed point theorems in cone metric spaces (see also, [5, 7, 8]). Recently Altun et al. [2] proved some fixed point and common fixed point theorems in ordered cone metric spaces. The purpose of this paper is to obtain fixed point and common fixed point of mappings satisfying a generalized contractive condition than given in [2] in the frame work of ordered cone metric spaces.

Consistent with Huang and Zhang [4], the following definitions and results will be needed in the sequel.

Let E be a real Banach space. A subset P of E is called a *cone* if and only if:

- (a) P is closed, non empty and $P \neq \{\theta\}$;
- (b) $a, b \in R, a, b \geq 0, x, y \in P$ imply that $ax + by \in P$;
- (c) $P \cap (-P) = \{\theta\}$.

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