

MANN ITERATIVE ALGORITHM IN CONVEX METRIC SPACES ENDOWED WITH A DIRECTED GRAPH

LILI CHEN*, NI YANG** AND YANFENG ZHAO***

*College of Mathematics and Systems Science, Shandong University of Science and Technology, Qingdao 266590, China;
Department of Mathematics, Harbin University of Science and Technology, Harbin 150080, China
E-mail: chenlili0819@foxmail.com

**Department of Mathematics, Harbin University of Science and Technology, Harbin 150080, China
E-mail: 1342323863@qq.com

***College of Mathematics and Systems Science, Shandong University of Science and Technology, Qingdao 266590, China
E-mail: zhaoyanfeng1101@126.com

Abstract. The aim of this paper is to introduce Mann iterative algorithm by using the convex structure in the metric space endowed with a directed graph. First of all, the concept of the convex metric space endowed with a directed graph is given. Moreover, Mann iteration scheme and the corresponding convergence theorems for the G -monotone contractive mappings and the G -monotone nonexpansive mappings in convex metric spaces endowed with a directed graph are established respectively. In addition, an example is shown to illustrate that the Mann iterative sequence does not necessarily converge to the fixed point of the G -monotone nonexpansive mapping.

Key Words and Phrases: Metric space endowed with a directed graph, convex structure, Mann iterative algorithm.

2020 Mathematics Subject Classification: 46B20, 46E30, 47H09, 47H10.

Acknowledgement. This work was supported by the fund Shandong Provincial Natural Science Foundation under grant ZR2020MA006 University Nursing Program for Youth Scholars with Creative Talents in Heilongjiang Province under Grant UNPYSCT-2017078, Postdoctoral Science Foundation of Heilongjiang Province under Grant LBH-Q18067 and the Introduction and Cultivation Project of Young and Innovative Talents in Universities of Shandong Province.

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Received: March 7, 2019; Accepted: November 16, 2020.

