Existence and convergence for a new multivalued hybrid mapping in CAT(\(\kappa\)) spaces

EMIRHAN HACIOĞLU and VATAN KARAKAYA

ABSTRACT.

Most of the studies about hybrid mappings are carried out for single-valued mappings in Hilbert spaces. We define a new class of multivalued mappings in CAT(\(\kappa\)) spaces which contains the multivalued generalization of \((\alpha, \beta)\)-hybrid mappings defined on Hilbert spaces. In this paper, we prove existence and convergence results for a new class of multivalued hybrid mappings on CAT(\(\kappa\)) spaces which are more general than Hilbert spaces and CAT(0) spaces.

REFERENCES


Received: 07.09.2016; In revised form: 08.06.2017; Accepted: 16.06.2017
2010 Mathematics Subject Classification. 45J05, 47H10.
Key words and phrases. Multivalued hybrid mapping, multivalued mapping, fixed point, convergence, CAT(\(\kappa\)) spaces.
Corresponding author: Emirhan Hacioğlu; emirhanhacioglu@hotmail.com
[16] Song, Y. and Wang, H., Convergence of iterative algorithms for multivalued mappings in Banach Spaces, Nonlinear Analysis, 70 (2009), 1547–1556


DEPARTMENT OF MATHEMATICS
YILDIZ TECHNICAL UNIVERSITY
DAVUTPASA CAMPUS, 34210 ISTANBUL, TURKEY
E-mail address: emirhanhacioglu@hotmail.com
E-mail address: vkkaya@yahoo.com