
TOPOLOGICAL SEMIGROUPS OF NONLINEAR OPERATORS IN UNIFORMLY CONVEX MODULAR SPACES

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ABSTRACT

This talk centers around the study of common fixed point properties of topological semigroups of nonexpansive mappings in modular vector spaces generalizing some results of Browder [2] for its Banach space counterpart. In the first part, we define a notion of uniform convexity for modular vector spaces which generalizes the classical concept of uniformly convex normed spaces, and study in this framework actions of (left) reversible semitopological semigroups of nonexpansive mappings on bounded closed convex sets. In the second part, we study such properties for arbitrary modular vector spaces for actions of topological right groups on bounded closed convex sets with normal structure in modular spaces without uniform convexity generalizing a result of Belluce and Kirk [1] in fixed point theory of Banach spaces.

Keywords modular space · left reversible semigroup · uniform convexity

References

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- [2] F. E. Browder, Non-expansive nonlinear operators in Banach spaces, Proc. Nat. Acad. Sci. U. S. A., 54: 1041-1044, 1965.

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