

Nonlocal Differential Problems in Abstract Spaces

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Abstract

This talk presents results on the existence and localization of solutions for nonlocal differential problems in abstract spaces. The differential equations under consideration involve a term governed by an m -dissipative maximal monotone operator, which may also be nonlinear. The proposed approach is based on fixed point theorems combined with so-called transversality conditions, offering a unifying framework for the study of diffusion models in various settings. This method covers both periodic and more general nonlocal initial conditions, such as multipoint or integral-type conditions, and can handle nonlinearities with superlinear growth, including cubic-type terms or nonlinearities depending on the integral of the solution, thus capturing behaviors characteristic of nonlocal diffusion phenomena. The talk is mainly based on the papers [1], [2], [3].

References

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