$R_δ$-STRUCTURE OF SOLUTIONS SET FOR A VECTOR EVOLUTION INCLUSIONS DEFINED ON RIGHT HALF-LINE

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Abstract. In this paper, we deal with the topological structure of a first order vector differential inclusion defined on right half-line. Under some general growth conditions, the $R_δ$ structure of continue solution set for Cauchy problem on compact interval is investigated. Then by the inverse limit method, the $R_δ$ structure is also obtained on noncompact interval. Further, using the related results of structure, we obtain the existence and topological structure of solution set for some nonlocal problems. Subsequently a optimal dual control problem is considered and an $R_δ$ structure of attainable set based on the proven results is obtained.

Key Words and Phrases: Vector differential inclusion, topological structure, nonlocal condition, inverse limit, growth condition, $R_δ$ set.

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