POSITIVE PIECEWISE PSEUDO ALMOST PERIODIC SOLUTIONS OF A GENERALIZED HEMATOPOIESIS MODEL WITH HARVESTING TERMS AND IMPULSES

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Abstract. This paper is mainly concerned with a generalized hematopoiesis model with harvesting terms and impulses. Based on the contraction mapping principle and generalized Gronwall-Bellmain inequality, the new results on the existence, uniqueness and globally exponential stability of the positive piecewise pseudo almost periodic solutions of the addressed model are established. Some corresponding results in the literature can be complemented and extended. In addition, an example is given to illustrate the effectiveness of the new obtained results.
Key Words and Phrases: Positive piecewise pseudo almost periodic solution, hematopoiesis model, harvesting term, impulses, contraction mapping principle, generalized Gronwall-Bellmain inequality.
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1. Conclusion

In this paper, we investigate generalized hematopoiesis model with harvesting terms and impulses, which are more generalized and different from the corresponding ones known in the literature. The results on the existence and uniqueness of positive piecewise pseudo almost periodic solution have been completely established by means of the contraction mapping principle, the global exponential stability of pseudo almost periodic solutions are further obtained by applying the generalized Gronwall-Bellmain inequality. Our results can improve and extend previous works in the literature.

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