

Study of the stability at the origin of the ratio-dependant model using the optimal derivative

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A problem encountered in the study of the stability at the origin of the ratio dependant predator-prey system is the existence of non-regular functions. The aim of this communication is to present a parametric analysis of the stability and global dynamics near the origin of a ratio dependant predator-prey system arising in halieutic, using the Optimal Derivative. This method have been introduced by Benouaz-Arino (1995, 2000) and can be applied when the classical linearization cannot be used at the origin. Some computer simulation are presented to illustrate the possibilities giving by this method.

References

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