

HETEROGENEOUS ENVIRONMENT AS A CAUSE OF OSCILLATORY ZOOPLANKTON DYNAMICS ARISING IN A CHAIN OF BIOTOPES WITH A STATIONARY INHERENT DYNAMICS. MATHEMATICAL MODELING.

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The dynamics of a zooplankton (rotifers) population inhabiting spatially-extended environment with a local heterogeneity is studied. A modified Consensus model [1] is used to model a chain of biotopes in each of which some kind of inherent zooplankton dynamics depending on the environment properties is realized. Parameters of the model are chosen so that an inherent zooplankton dynamics in all biotopes is a stationary regime. The parameter which characterizes environment properties in a central biotope differs a little from the others. In contrast to our previous work [2] the parameter which defines a zooplankton species is corresponded with an upper half plane, not lower half plane in a model parameter space [1]. It's showed that arising of a zooplankton biomass exchange in a chain of biotopes leads to a transformation of a stationary zooplankton dynamics regime into oscillations in a central biotope and surrounding ones.

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Literature

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2. M.M. Gonik, A.B. Medvinsky. Confinement of dynamical chaos expansion in the rotifer populations inhabiting heterogeneous environment: an effect of attractor size invariance// *Nonlinear Dynamics, Psychology, and Life Sciences*, v. 11(2), 2007, pp. 185-196.