

A Dynamic Model of an Agroecosystem

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ABSTRACT

The dynamic flow model of an agricultural ecological system is constructed by 'storage-flow' diagram of the corresponding compartmental model. For the resulting systems of ordinary differential equations the form of the Jacobi matrix in equilibrium and possible functional conditions are established. Numerical experiments with the model are carried out on the data of the Kursk-Region agroecosystem (Russia). Examples of the experiments are presented. Estimations of the future energetic storages in compartments of the Kursk-Region rural economy are obtained. The dynamics of the different indices of the agroecosystem is investigated.

Keywords: *Flow analysis, dynamic model, compartment, agroecosystem, bifurcation, limit cycle, chaos*

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