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## A SOLUTION ALGORITHM FOR A PROBLEM OF OPTIMAL EXPLOITATION OF A SYSTEM WITH A BINARY STRUCTURE

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We consider a dynamic problem of an optimal sustainable exploitation of a renewable bioresource system that in equilibrium is equivalent to a mathematical programming problem. The latter, in the case of a system with a binary structure described by a nonlinear generalization of Leslie's model, for a fixed value of some aggregated variable, turns into a linear program. A solution algorithm is proposed for the optimal sustainable exploitation problem. The algorithm employs the peculiarities of the constraint system of the problem dual to this linear program and reduces the original problem to a series of one-dimensional optimization problems.

Keywords: rational exploitation of ecosystems, optimal nondestructive controls, concave programming.

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