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A SCALAR PROBLEM OF STOCK CONTROL UNDER FUZZY DEMAND

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A scalar discrete dynamic problem of stock control is considered. It is assumed that the information about the demand for goods comes at each discrete moment in time in the form of a fuzzy number that belongs to a given base of fuzzy numbers. The control is sought in the class of real numbers. At each time, the amount of available goods is characterized by a fuzzy number. The aim of the control is to guarantee that the value of the membership function of the amount of goods realized at a given time calculated on the desired value of the amount of goods is not less than a given real number. We construct a set of initial stocks of goods such that for each of them it is possible to form a control that fulfills the aim for any realization of a fuzzy query. If the value of the initial stock of goods does not belong to this set, then there is an algorithm for generating a demand under which the aim of the control cannot be achieved.

Keywords: discrete system, stock management problem, fuzzy demand information.

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