

About Some Continuous Models for Current Stock of Divisible Production Calculation

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It is a quite complicated task to find the good solution for the necessary stock, if you are working in commerce or transport industry. In practice it is common for inventory manager to answer on two basic questions: how many to order and when to order, and there are different models of inventory control which provide us with a satisfactory solution. We can classify these models taking in account different their properties: deterministic and stochastic models; linear and nonlinear models, single- and multi-product models, discrete and continuous models, and etc.

In the given paper we investigate the problem of creation of continuous and unsteady mathematical models for current stock of divisible production calculation, using apparatus and equations of mathematical physics. We suppose that time of production consuming and supplementing is continuous. The created models are stochastic and have different level of complexity, and they have different levels of adequacy and application potentialities. The simple models are created using ordinary differential equations theory, for complex models creation partial differential equations theory is applied. Furthermore for some of proposed models we have found analytical solution in the closed form, and discretization of some models is carried out using stable difference schemes.