Algorithmic method for modeling the optimal treatment of patients with HIV

Anna Presnova

Higher School of Economics National Research University

The problem of stabilizing the level of cells of the immune system in patients with the HIV virus is considered. The mathematical model describing the dynamics of HIV in the human body is a nonlinear system of differential equations. In the work for constructing suboptimal control of the supply of drugs, the method of "extended linearization" (SDC, state dependent coefficient) is used, which makes it possible to switch from a nonlinear model to a linear model, but with parameters that depend on the state. To solve the obtained Riccati-type equation, a new method of algorithmic construction is proposed.