

Optimal control of drugs in the mathematical model of dynamics of a tumor-immune system

Master Project

Abstract The goal of this Master project is development of the optimization method for the solution of a parameter identification problem for system of ordinary differential equations which describes dynamics of a tumor-immune system with chemotherapeutic as well as immunotherapeutic drugs. We will use mathematical model (5)-(6) of [1] in order to minimize the Tikhonov functional (7) of [1]. Algorithm for the solution of the problem should be formulated and numerically tested.

References

1. S. Sharma, G. P. Samantha, Analysis of the Dynamics of a TumorImmune System with Chemotherapy and Immunotherapy and Quadratic Optimal Control, *Differ. Eq. Dyn. Syst.*, Springer, 24(2), pp. 149-171, 2016. DOI 10.1007/s12591-015-0250-1