

Application of control theory in modeling of brain cancer

Mahmoud M. El-Borai

m_m_elborai@yahoo.com

Faculty of Science, Alexandria University, Alexandria, Egypt

Abstract

In this paper a mathematical model is presented that describes the concentration of tumor cells of the brain. The treatment of the brain cancer is interpreted as an optimal control problem. Evolution of the disease is characterized by a parabolic partial differential equation that describes the growth of a tumor brain.

While biomedical research concentrates on the development of new drugs and experimental and clinical determinations of their treatment schedules, the analysis of mathematical models can assist in testing various treatment strategies and searching for optimal ones.

Using the considered mathematical model, we try to solve some medical problems in brain cancer.

Keywords: Optimal control, tumor cells, brain cancer, parabolic partial differential equations.

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