

1071-92-14

Dina Miqdadi* (dina.miqdadi@mavs.uta.edu), Department of Bioengineering, Univ. of Texas at Arlington, Arlington, TX 76019, and **Mostafa Ghandehari**. *A Discrete Optimal Control in Pharmacokinetics*. Preliminary report.

A discrete compartmental model of pharmacokinetics is given. An optimal control problem is formulated to minimize toxicity or cost of medications. Concepts from linear algebra for example eigenvalues, eigenvectors and diagonalization of matrices is used to analyze the problem. Examples of two compartmental medications for local anesthetics, congested heart failure and bipolar disorder is given. (Received November 16, 2010)