

Asymptotic behavior of a continuous-time model describing two-phase cell cycle

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April 12, 2012

Abstract

We consider a model of two-phase cell cycle in maturity-structured cellular population, which consists of a system of first order linear partial differential equations (transport equations). The model is based on similar biological assumptions as models of Lasota-Mackey, Tyson-Hannsgen and Tyrcha. We examine the behavior of solutions of the system along the characteristics, give conditions for a global asymptotic stability and compare results with outcomes of generational model.