

On the asymptotic stabilizability of a nonlinear bioprocess model

Neli S. Dimitrova¹, Mikhail I. Krastanov^{2,1}

¹ Institut of Mathematics and Informatics,
Bulgarian Academy of Sciences
Acad. G. Bonchev str., block 8, 1113 Sofia
nelid@math.bas.bg

² Department of Mathematics and Informatics
Sofia University "Ct. Kliment Ohridski"
James Bourchier Boul. 5, 1126 Sofia
krastanov@fmi.uni-sofia.bg

Keywords: asymptotic stabilizability, bioprocess model, bioreactor.

A nonlinear model of a bioprocess is considered. Assuming that the model parameters are unknown but bounded, the global asymptotic stabilizability of the control system is studied. The performance of the approach is illustrated via numerical simulations.