

Stability analysis for linear repetitive processes

Springer-Verlag - Stability Analysis for Linear Repetitive Processes by Eric Rogers, David H. Owens, Paperback

Cultivation mode	t_{down}	t_{prod}	Total product
Fed-batch	65.7%	34.3%	$P_{\text{fedbatch}} = V_{\text{bioreactor}} \cdot q_{\text{bioreactor}}$
Repetitive fed-batch (2 cycles)	48.9%	51.1%	$P_{\text{fedbatch}} = ((V_{\text{bioreactor}} - \frac{V_{\text{bioreactor}}}{2}) \cdot q_{\text{bioreactor}}) + (V_{\text{bioreactor}} \cdot q_{\text{bioreactor}})$
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Chemostat	14.3%	85.7%	$P_{\text{chemostat}} = \sum V_{\text{bioreactor}} \cdot q_{\text{bioreactor}}$

Fed-Batch	time [t]
repetitive FB (2 induction phases)	time [t]
repetitive FB (3 induction phases)	time [t]
Chemostat	time [t]

Induced Continuous cultivation	time [t]
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Description: -

- Wrestling -- Juvenile literature

Linear systems.

Process control.

Automatic control. Stability analysis for linear repetitive processes

- 175

Lecture notes in control and information sciences ; Stability analysis for linear repetitive processes

Notes: Includes bibliographical references (p. 194-197).

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This, in turn, led to systematic attempts at controller design for these and several other industrial examples based, essentially, on appropriately modifying existing standard linear system techniques such as Nyquist diagrams.

PI control of discrete linear repetitive processes

Les cours du CIRM, Journées Nationales de Calcul Formel, 1 2 , 281—471. In Proceedings of American control conference ACC , Boston, USA. A numerical example is given to illustrate the effectiveness of the proposed method.

The Influence of Boundary Conditions on The Stability of Repetitive Processes Modelled as 2D Linear Systems

Lecture notes in control and information science Vol.

PI control of discrete linear repetitive processes

Multidimensional linear iterative circuits—General properties.

PI control of discrete linear repetitive processes

Multidimensional control systems: Case studies in design and evaluation. They can, for example, be used as an analysis tool in iterative learning control ILC schemes as fully explained in Owens, Amann, Rogers, and French 2000. The concept of a multipass process was first introduced in the early 1970s as a result of work at the University of Sheffield on the modelling and control of long-wall coal cutting operations.

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Stability and stabilization of linear multidimensional discrete systems in the frequency domain. Industrial processes such as long-wall coal cutting

and me- tal rolling, together with certain areas of 2D signal and image processing, exhibit a repetitive, or multipass struc- ture characterized by a series of sweeps of passes through a known set of dynamics.

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