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Perturbing evolutionary systems by step responses and cumulative outputs. (English)

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Differ. Integral Equ. 8, No. 5, 1205-1244 (1995).

Summary: We develop a perturbation theory for strongly continuous backward evolutionary systems and their adjoint systems. The theory is not based on generating families but on certain operator families called step responses and cumulative outputs. The perturbation problem is reduced to solving an abstract Stieltjes integral equation of nonconvolution type. The theory is well suited for treating structured population models.

MSC:

- 47D99 Groups and semigroups of linear operators, their generalizations and applications
- 47E05 General theory of ordinary differential operators (should also be assigned at least one other classification number in Section 47-XX)
- 45N05 Abstract integral equations, integral equations in abstract spaces
- 92D25 Population dynamics (general)

Cited in 1 Review
Cited in 4 Documents

Keywords:

perturbation theory for strongly continuous backward evolutionary systems and their adjoint systems; operator families; step responses; cumulative outputs; abstract Stieltjes integral equation of nonconvolution type