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Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

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Correct behavior of Green's operators of singular boundary value problems
A Green's operator of a Vallee-Poussin boundary value problem $(Ax)(t) = f(t)$, $t \in [a, b]$, $x^{(i)}(a_j) = 0$, $i = 0, \ldots n_j - 1$, $a = a_1 < a_2 < \ldots < a_k = b$, $\sum_{j=1}^{k} n_j = n$, behaves correctly, if for each non-negative function f the solution x satisfies to the inequality $x(t) \prod_{j=1}^{k} (t - a_j)^{n_j} \geq 0$, $t \in [a, b]$.
Continuing researches of N. Azbelev, E. Chichkin, A. Domoshnitsky and S. Labovsky, we offer statements giving possibility to establish the correct behavior of Green's operators of Vallee-Poussin boundary value problems for the n-order linear functional-differential equations with a singular factor at the higher derivative.
Reference: N. Azbelev, and A. Domoshnitsky, To a question on linear differential inequalities. (Russian) Differential Equations 27, (1991), 376-384; 923-931.