

## About unique solvability and positivity of Green's functions for impulsive delay equations

Alexander Domoshnitsky, Irina Volinsky

Ariel University, Department of Mathematic and Computer Science, Israel

adom@ariel.ac.il, irinav@ariel.ac.il

In this talk we obtain various existence and uniqueness results for impulsive boundary value problem, and assertions about positivity/negativity of Green's function for the following problem

$$(1) \quad (Lx)(t) = x'(t) + \sum_{i=1}^m p_i(t)x(t - \tau_i(t)) = f(t), \quad t \in [a, b]$$

$$(2) \quad \begin{aligned} x(t_j) &= \beta_j x(t_j - 0), \quad j = 1, \dots, k, \\ a &= t_0 < t_1 < t_2 < \dots < t_k < t_{k+1} = b, \end{aligned}$$

$$(3) \quad x(\zeta) = 0, \quad \zeta \notin [a, b],$$

with the following variants of boundary conditions

$$(4) \quad lx = \int_a^b \varphi(s)x'(s) ds + \theta x(a) = c, \quad \varphi \in L_\infty[a, b]; \theta, c \in R.$$