

**Differential games described by infinite system of differential equations of second order.  
The case of negative coefficients**

ABSTRACT

We study pursuit and evasion differential game problems for an infinite system of differential equations of second order. Control functions are subject to integral constraints. The pursuit is completed if  $z(t) = ( ) = 0$  at some  $t > 0$ , where  $z(t)$  is the state of the system. The pursuer tries to complete the pursuit and the evader exactly tries to avoid this. A sufficient condition is obtained for completing the pursuit in the differential game when control recourse of the pursuer greater than that of the evader. In the case where the control recourse of the evader not less than that of the pursuer we study an evasion problem.

**Keyword:** Evasion; Integral constraint; Pursuit; Strategy