

## **On 0-controllability and pursuit problems for linear discrete systems under total constraints on controls**

### **ABSTRACT**

We consider linear discrete control and pursuit game problems. Control vectors are subjected to total constraints, which are discrete analogues of the integral constraint. By definition, (i) the control system is 0-controllable on the whole if there is a control such that the state of the system  $z(t) = 0$  at some step  $t$ , (ii) pursuit can be completed if there exists a strategy of the pursuer such that for any strategy of the evader the state of the system  $y(t) = 0$ . We obtained sufficient condition for equivalence of 0-controllability and completion of the game from any initial position of the space.

**Keyword:** Linear discrete systems; Pursuit game problems; Linear transformation