

GENERALIZED L.S.PONTRYAGIN'S TEST EXAMPLE

$$x^{(k)} + a_{k-1}x^{(k-1)} + \dots + a_1x^{(1)} + a_0x = u,$$

$$y^{(s)} + b_{s-1}y^{(s-1)} + \dots + b_1y^{(1)} + b_0y = v,$$

$$t \in [0, T], \quad x, y \in R^2, \quad u \in P, \quad v \in Q$$

u – the first player control

v – the second player control

Payoff: $\varphi(x(T), y(T)) = |x(T) - y(T)|$

The first player minimizes the payoff value,
the second one maximizes it.