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A reachable set estimation algorithm for impulsive control systems.

Osipenko, G. S. (ed.), Tools for mathematical modelling. Proceedings of the 4th international conference, St. Petersburg, Russia, June 23–28, 2003. St. Petersburg: St. Petersburg State Polytechnic University (ISBN 5-7422-0511-2/pbk). Math. Res., St. Petersburg 9, 213-219 (2003).

Summary: We present the outline of an algorithm to approximate the boundary of the reachable set for general nonlinear impulsive dynamic control systems. This algorithm consists in an efficient procedure to successively generate faces of a polyhedron approximating the reachable set of a related conventional nonlinear control system obtained from the original one by the reduction method of *V.A. Dykhta* and *O.N. Samsonyuk* [Optimal impulse control with applications. Moscow: Nauka (Science) (2000; Zbl 1084.49500)] and *V.I. Gurman* [Degenerate optimal control problems. Moscow: Nauka (1977; Zbl 0457.49021)].

Keywords: approximation of the boundary of the reachable set; general nonlinear impulsive dynamic control systems