SlideCont: an Auto97 driver for sliding bifurcation analysis

Fabio Dercole
Dipartimento di Elettronica e Informazione
Politecnico di Milano
Via Ponzio 34/5
20133 Milano, Italy

Abstract

SlideCont, an Auto97 driver for sliding bifurcation analysis of discontinuous piecewise-smooth autonomous systems, known as Filippov systems, is described in detail. Sliding bifurcations are those in which some sliding on the discontinuity boundary is critically involved. The software allows for detection and continuation of codimension-1 sliding bifurcations as well as detection of some codimension-2 singularities, with special attention to planar systems ($n = 2$). Some bifurcations are considered also for n-dimensional systems.