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Lucio Tavernini* (lucio@tavernini.com), Department of Applied Mathematics, The University of Texas at San Antonio, San Antonio, TX 78249. *Numerical Experiments with Differential Automata Models of Hybrid Systems*. Preliminary report.

In this talk, accessible to the nonspecialist, we present the results of various numerical simulations using the differential automaton model of hybrid systems. In addition to considering models of typical control systems, especially those with hysteretic and impulsive properties, we show how differential automata provide a novel way to model physical systems and illustrate the phenomenon of the initial value problem being well posed not in general, but only generically. (Received September 25, 2005)