“(Max,+)-automata: composition and control”

(Max,+)-automata are weighted automata with weights in the (max,+) semiring. A special class of nondeterministic (max,+)-automata, called heap automata or heap models are capable of representing any safe timed Petri net. There are two ways of modeling complex (multi-clock) timed discrete-event systems: either using heap automata or synchronous product of (max,+)-automata. Both modeling approaches are quite different and as well as their corresponding supervisory control approaches that will be discussed in detail.